

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

Consolidated financial statements
for the years ended December 31, 2018 and 2017
with the independent auditor's report

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Independent auditor's report

The Board of Directors and Stockholders GS Engineering & Construction Corporation

Opinion

We have audited the accompanying consolidated financial statements of GS Engineering & Construction Corporation and its subsidiaries (collectively referred to as the "Group"), which comprise the consolidated statements of financial position as of December 31, 2018 and 2017, 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 notes to the consolidated financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects the consolidated financial position of the Group as of December 31, 2018 and 2017 and its consolidated financial performance and its consolidated cash flows for the years then ended in accordance with Korean International Financial Reporting Standards.

Basis of opinion

We conducted our audits in accordance with Korean Auditing Standards (KGAAS). Our responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the consolidated financial statements section of our report. We are independent of the Group in accordance with the ethical requirements that are relevant to our audits of the consolidated financial statements in the Republic of Korea, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the financial statements of the current year. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

A. Uncertainty in estimating total contract costs

A majority of the Group's construction contracts are performed over a long period of time and total contract costs are estimated based on the future estimates of the components thereof.

Therefore, there may be additional costs that were not estimable until the previous year 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 in which constructions are ongoing; and
- Extension of construction period of some plant construction

For these reasons, there is uncertainty in estimating total contract costs and a change in the total contract cost estimation will affect the profit or loss of the current or future years. Accordingly, we identified the uncertainty in estimating the total contract costs as a key audit matter.

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

- Inquire and verify the related documents for projects with significant differences in total input costs and the estimated total contract costs of the contracts terminated during the year
- Inquire the reason for significant changes in total contract costs during the period for major contracts and confirm the supporting documents concerning reasons for the changes
- Inquire 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 approved in an appropriate manner
- Inquire for the existence of major contracts with possible changes in the estimated total contract cost due to delays in construction and extension of construction period
- Inquire for the validity of total contract cost estimation on significant contracts in which there are no changes in total contract costs for a long period of time

B. Calculation of the percentage-of-completion of a construction

In the case of a construction contract where revenue is recognized based on the input method, the percentage-of-completion of the construction is a direct factor in the calculation of contract revenue. On the other hand, the calculation of the percentage-of-completion of the construction will be affected by the appropriateness of the total estimated construction costs and cumulative contract cost incurred. Accordingly, considering that the effect of uncertainty of the total estimated contract cost, timeliness of the total estimated contract cost, and reliability of the cumulative cost incurred is material to the current profit or loss, we identified the estimation of percentage-of-completion of the construction as a key audit matter.

The major audit procedures we performed are as follows.

- Inquire the calculation method of contract cost incurred, and changes in the system and control of the calculation of actual cost of individual construction contract and test the related internal control
- Test the approval of the occurrence amounts and accurate assignment on sites of incurred costs aggregated by major site
- Inquire construction contracts whose percentage-of-completion of the construction has changed significantly during the current year
- Inquire the occurrence of costs excluded from the calculation of percentage-of-completion as the progress of contract is not reflected and inquire the accounting thereof
- Independently recalculate the percentage-of-completion by contract for the analysis of the calculation of the percentage-of-completion
- Compare the difference between the percentage of progress used for the accounting purpose and the percentage of completion by observing the information available to the auditors in the work site and review the validity thereof

C. Recoverability of unbilled contracts

As described in Note 8 to the accompanying financial statements, unbilled construction recorded in the consolidated statement of financial position amounts to ₩1,727,306 million as of December 31, 2018 which increased by ₩206,370 million compared to the previous year, and accounted for 40% of the total trade and other receivables. Generally, unbilled construction can be claimed based on the conditions of the contract, such as the completion of the related process of construction and the customer's inspection of the project. Thus, there is a possibility of unavoidable fluctuation of the payment condition depending on the inspection results. A significant portion of the unbilled construction 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, as management's judgment is significant in estimating the recoverability of unbilled construction, we identified it as a key audit matter.

The major audit procedures we performed are as follows.

- Review the payment terms of construction contract with significant unbilled construction amounts and check if there is any site with abnormally significant unbilled construction amounts
- Identify construction sites of which there exists significant difference between the percentage-of-completion and construction billing progress and inquire the reasons therefrom
- Identify significant construction contracts with unbilled contracts, and inquire the possibility of financial risk of the customer and verify other related information
- If there are significant sites in which there are no changes in unbilled construction for a long period of time, inquire for specific reasons such as lawsuit, etc.

D. Accounting for variations in construction

Variations of construction refer to the change in the scope of the construction by the instruction of the customer. As described in Note 8 to the consolidated financial statements, the changes in the total estimated construction revenue amounted to ₩2,619,721 million. As majorities of the Group's construction contracts are performed over a long period of time, there exists possibility of variations in contract work. Also, the total revenue may increase or decrease due to variations in contract work. Accounting for variations in construction requires an estimate of possibility of a change the total revenue, and management's judgment on a reliable measurement of the changes. In addition, the changes in the total construction revenue and costs, caused by variations in contract work, will affect the profit or loss of the current or future years. Accordingly, we identified the accounting for variations in construction as key audit matter.

The major audit procedures we performed are as follows.

- Inquire the reasons for the changes in construction contracts with significant fluctuations in contract revenue
- Inquire the possibility of liquidated damages for delay for project which is overdue or will reach the due date soon
- Inquire as to whether the estimation of additional contract costs are reflected in the calculation of estimated total contract costs and percentage-of-completion

Responsibilities of management and those charged with governance for the consolidated financial statements

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

In preparing the consolidated financial statements, management is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Group's financial reporting process.

Auditor's responsibilities for the audit of the consolidated financial statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Korean Auditing Standards (KGAAS) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with Korean Auditing Standards (KGAAS), we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit 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 Group's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

The partner in charge of the audit resulting in this independent auditor's report is Lee, Tae Gon.

Ernst & Young Han Young

March 14, 2019

This audit report is effective as of March 14, 2019, the independent auditor's 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 consolidated 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, 2018 and 2017

“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 of December 31, 2018 and 2017

(Korean won in millions)

	Notes	2018	2017
Assets			
Current assets			
Cash and cash equivalents	10,32,33	₩ 1,592,619	₩ 2,442,298
Trade and other receivables, net	7,8,10,30,32,33	4,297,385	4,763,280
Inventories	9	1,034,194	1,090,698
Short-term financial assets	6,10,12,32,33	295,205	295,943
Other current assets	9	608,762	990,122
Total current assets		7,828,165	9,582,341
Non-current assets			
Property, plant and equipment, net	14	841,048	897,519
Intangible assets, net	15	215,664	209,482
Investment properties	16	915,828	879,889
Investments in associates	13	73,491	44,389
Long-term trade and other receivables, net	7,8,10,30,32,33	946,330	963,196
Long-term financial assets	6,10,32,33	194,151	449,892
Deferred tax assets	28	788,390	669,907
Financial assets at fair value through profit or loss	10,11,33	230,208	-
Total non-current assets		4,205,110	4,114,274
Total assets		₩ 12,033,275	₩ 13,696,615
Liabilities			
Current liabilities			
Trade and other payables	10,17,30,32,33	₩ 2,023,490	₩ 2,473,849
Short-term financial liabilities	10,12,18,32,33	1,118,162	3,061,155
Income tax payable	28	181,500	72,198
Current provisions	8,20	118,471	-
Other current liabilities	8,10,17,20,33	2,918,104	2,974,051
Total current liabilities		6,359,727	8,581,253
Non-current liabilities			
Long-term trade and other payables	10,17,30,32,33	-	8,588
Long-term financial liabilities	10,12,14,16,18,32,33	1,147,180	1,018,028
Net defined benefit liabilities	19	72,788	55,407
Non-current provisions	10,20,32,33	533,924	441,020
Deferred tax liabilities	28	5,858	27,544
Other non-current liabilities	10,14,17,33	289,112	325,060
Total non-current liabilities		2,048,862	1,875,647
Total liabilities		8,408,589	10,456,900
Equity			
Equity attributable to owners of the parent			
Issued capital	1,22	397,179	358,376
Share premium	22	811,768	627,156
Other components of equity	22	(77,044)	(87,207)
Accumulated other comprehensive loss	12,22	(70,463)	(65,365)
Retained earnings	23	2,487,073	2,334,346
		3,548,513	3,167,306
Non-controlling interests		76,173	72,409
Total equity		3,624,686	3,239,715
Total liabilities and equity		₩ 12,033,275	₩ 13,696,615

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, 2018 and 2017
(Korean won in millions, except per share amounts)

	Notes	2018	2017
Sales	5,8,30		
Construction operations		₩ 12,274,523	₩ 10,552,235
Housing construction and sales operations		570,833	844,940
Other operations		294,017	282,281
		<u>13,139,373</u>	<u>11,679,456</u>
Cost of sales	8,29,30		
Cost of construction operations		10,775,213	10,003,144
Cost of housing construction and sales operations		444,309	590,150
Cost of other operations		292,286	282,820
		<u>11,511,808</u>	<u>10,876,114</u>
Gross profit		<u>1,627,565</u>	<u>803,342</u>
Selling and administrative expenses	25,29	<u>563,076</u>	<u>484,673</u>
Operating profit	5	1,064,489	318,669
Other operating income	10,26	259,119	300,564
Other operating expenses	10,26	318,459	757,876
Share of profit of an associate and a joint venture	13	6,502	(6,088)
Finance income	10,27	106,444	288,816
Finance costs	10,27	<u>283,046</u>	<u>304,827</u>
Profit (loss) before income tax	5,32	835,049	(160,742)
Income tax expenses	28	<u>247,615</u>	<u>2,934</u>
Loss for the year		<u>₩ 587,434</u>	<u>₩ (163,676)</u>
Profit (loss) attributable to:			
Equity holders of the parent		582,099	(168,388)
Non-controlling interests		5,335	4,712
Loss per share attributable to the equity holders of the parent (Korean won)	24		
Basic profit(loss) per share		₩ 7,788	₩ (2,431)
Diluted profit(loss) per share		7,136	(2,431)

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, 2018 and 2017
(Korean won in millions)

	Notes	2018	2017
Income(loss) for the year		₩ 587,434	₩ (163,676)
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	22,28	-	(6)
Loss on valuation of available-for-sale financial assets	22,28	-	850
Gain on exchange differences on translations of foreign operations	22,28	(4,831)	48,846
Loss on exchange differences on translations of foreign operations	22,28	5,224	(55,985)
Gain on valuation of derivative instruments	12,22,28	(7,035)	(13,192)
Loss on valuation of derivative instruments	12,22,28	(3,319)	52,210
Other comprehensive income not to be reclassified to profit or loss in subsequent periods (net of tax):			
Re-measurements on net defined benefit liabilities	19,23,28	(11,818)	5,946
Other comprehensive income for the year		(21,779)	38,669
Total comprehensive income (loss) for the year		₩ 565,655	₩ (125,007)
Attributable to:			
Equity holders of the parent		565,092	(123,754)
Non-controlling interests		563	(1,253)

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, 2018 and 2017
(Korean won in millions)

	Attributable to equity holders of the parent						Non-controlling Interests	Total equity
	Issued capital	Share premium	Other components of equity	Accumulated other comprehensive income (loss)	Retained earnings	Total		
As of January 1, 2017	₩ 355,000	₩ 610,856	₩ (87,207)	₩ (104,053)	₩ 2,504,196	₩ 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 of December 31, 2017	<u>₩ 358,376</u>	<u>₩ 627,156</u>	<u>₩ (87,207)</u>	<u>₩ (65,365)</u>	<u>₩ 2,334,346</u>	<u>₩ 3,167,306</u>	<u>₩ 72,409</u>	<u>₩ 3,239,715</u>
As of January 1, 2018	<u>₩ 358,376</u>	<u>₩ 627,156</u>	<u>₩ (87,207)</u>	<u>₩ (65,365)</u>	<u>₩ 2,334,346</u>	<u>₩ 3,167,306</u>	<u>₩ 72,409</u>	<u>₩ 3,239,715</u>
Cumulative effect of changes in accounting policy	-	-	-	91	(395,787)	(395,696)	-	(395,696)
Restated total equity at the beginning of the financial year	<u>₩ 358,376</u>	<u>₩ 627,156</u>	<u>₩ (87,207)</u>	<u>₩ (65,274)</u>	<u>₩ 1,938,559</u>	<u>₩ 2,771,610</u>	<u>₩ 72,409</u>	<u>₩ 2,844,019</u>
Total comprehensive income (loss)								
Profit (loss) for the year	-	-	-	-	582,099	582,099	5,335	587,434
Gain on exchange differences on translations of foreign operations	-	-	-	(3,634)	-	(3,634)	(1,197)	(4,831)
Loss on exchange differences on translations of foreign operations	-	-	-	8,818	-	8,818	(3,594)	5,224
Gain on valuation of derivative instruments	-	-	-	(7,035)	-	(7,035)	-	(7,035)
Loss on valuation of derivative instruments	-	-	-	(3,338)	-	(3,338)	19	(3,319)
Re-measurements on net defined benefit liabilities	-	-	-	-	(11,818)	(11,818)	-	(11,818)
Total comprehensive income (loss) for the year	-	-	-	(5,189)	570,281	565,092	563	565,655
Transactions with equity holders of the parent								
Hybrid securities	-	-	-	-	(1,268)	(1,268)	-	(1,268)
Conversion of Hybrid securities	-	(7,369)	10,163	-	-	2,794	-	2,794
Dividends to equity holders of the parent	-	-	-	-	(21,071)	(21,071)	-	(21,071)
Changes in the non-controlling interest	-	-	-	-	-	-	1,444	1,444
Changes in consolidation	-	-	-	-	-	-	1,683	1,683
Conversion of convertible bond	38,803	191,981	-	-	-	230,784	-	230,784
Others	-	-	-	-	572	572	74	646
Total transactions with equity holders of the parent	38,803	184,612	10,163	-	(21,767)	211,811	3,201	215,012
As of December 31, 2018	<u>₩ 397,179</u>	<u>₩ 811,768</u>	<u>₩ (77,044)</u>	<u>₩ (70,463)</u>	<u>₩ 2,487,073</u>	<u>₩ 3,548,513</u>	<u>₩ 76,173</u>	<u>₩ 3,624,686</u>

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, 2018 and 2017
(Korean won in millions)

	<u>Notes</u>	<u>2018</u>	<u>2017</u>
Cash flows from operating activities			
Cash generated from operations	31	₩ 1,282,519	₩ (51,271)
Interest received		41,802	60,937
Interest paid		(150,212)	(175,760)
Dividends received		898	1,561
Income tax paid		(142,060)	(40,956)
Net cash flows from (used in) operating activities		1,032,947	(205,489)
Cash flows from investing activities			
Decrease in other receivables		369,230	616,636
Decrease in short-term financial assets		413,909	132,845
Decrease in other long-term receivables		284,788	268,224
Decrease in long-term financial assets		10,920	26,533
Disposal of financial assets at fair value through profit or loss		19,359	-
Disposal of property, plant and equipment		28,400	15,462
Disposal of intangible assets		514	5,179
Disposal of investment properties		1,070	28,577
Increase in other receivables		(382,262)	(444,373)
Increase in short-term financial assets		(475,111)	(135,315)
Increase in other long-term receivables		(372,700)	(306,723)
Increase in long-term financial assets		(9,022)	(75,144)
Acquisition of financial assets at fair value through profit or loss		(22,505)	-
Acquisition of investments in associates		(23,062)	(125)
Acquisition of property, plant and equipment		(13,696)	(20,776)
Acquisition of intangible assets		(19,685)	(9,990)
Acquisition of investment properties		(44,852)	(61,210)
Acquisition of subsidiaries		-	(26,296)
Changes in consolidation		(57)	-
Net cash flows from (used in) investing activities		(234,762)	13,504
Cash flows from financing activities			
Increase in short-term financial liabilities		995,667	2,219,184
Increase in long-term financial liabilities		446,712	505,646
Increase in other non-current liabilities		30,002	36,498
Increase in the non-controlling interests		3,125	711
Decrease in short-term financial liabilities		(2,975,642)	(2,342,819)
Decrease in other current liabilities		(11,886)	(12,286)
Decrease in long-term financial liabilities		(67,583)	(37,471)
Decrease in other non-current liabilities		(53,364)	(61,900)
Dividends		(21,071)	(720)
Interest payment in relation to the hybrid securities		(1,268)	(1,653)
Acquisition of treasury stock		-	(5,204)
Payment of stock issuance costs		(314)	(28)
Net cash flows from financing activities		(1,655,622)	299,958
Net foreign exchange difference		7,758	(22,004)
Net increase (decrease) in cash and cash equivalents		(849,679)	85,969
Cash and cash equivalents at the beginning of the year		2,442,298	2,356,329
Cash and cash equivalents at the end of the year		₩ 1,592,619	₩ 2,442,298

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, 2018 and 2017

1. General information

General information of GS Engineering & Construction Corporation (the "Company") and its subsidiaries including Xi S&D 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 of 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 of December 31, 2018 amounts to ₩397,179 million.

1.2 Summary of consolidated subsidiaries

Consolidated subsidiaries as of December 31, 2018, are as follows:

Subsidiary	Equity ownership (%)		Location	Year end	Principal business activity
	2018	2017			
Xi S&D Inc. (*1)	85.61	85.61	Korea	12.31	Home network system development and operation
Xi -Estec Co., Ltd. (*2)	100.00	100.00	Korea	12.31	Construction service
GCS (*3)	99.70	99.70	Korea	12.31	Resort maintenance service
BSM	100.00	100.00	Korea	12.31	Processing
Xi O&M	100.00	100.00	Korea	12.31	Plant operation and maintenance service
GS E&C Nanjing Co., Ltd.	100.00	100.00	China	12.31	Construction
GS Nha Be Development One-member LLC	100.00	100.00	Vietnam	12.31	Construction
GS Saigon Development One-member LLC	100.00	100.00	Vietnam	12.31	Construction
GS E&C Delhi Pvt. Ltd.	100.00	100.00	India	3.31	Construction service
GS Engineering & Construction Mumbai Pvt. Ltd.	100.00	100.00	India	3.31	Construction service
GS E&C Thai Co., Ltd. (*4)	49.00	49.00	Thailand	8.31	Real estate
GS EAST ASIA MANILA Inc. (*5)	-	100.00	Philippines	12.31	IT Consulting
GS E&C Malaysia SDN.BHD.	100.00	100.00	Malaysia	12.31	Construction
GS Construction Arabia Co., Ltd. (*6)	100.00	100.00	Saudi Arabia	12.31	Construction
GS Saudi Co., Ltd.	75.00	75.00	Saudi Arabia	12.31	Construction
GS E&C Poland SPZO.O	100.00	100.00	Poland	12.31	Construction
GS Engineering & Construction Spain, S.L	100.00	100.00	Spain	12.31	Construction
GS E&C Construction Canada Ltd.	100.00	100.00	Canada	12.31	Construction
GS E&C Panama S.A.	100.00	100.00	Panama	12.31	Lease
GS Inima Environment S.A. (*8)	80.42	80.42	Spain	12.31	Construction

1. General information (cont'd)

1.2 Summary of consolidated subsidiaries (cont'd)

Subsidiary	Equity ownership (%)		Location	Year end	Principal business activity
	2018	2017			
GS Village Lake LLC	100.00	100.00	USA	12.31	Real estate
Pala-power General Construction Service (Proprietary) Limited	100.00	100.00	Botswana	12.31	Construction
GS Engineering & Construction Australia Pty Ltd	100.00	100.00	Australia	12.31	Construction
PT. GSENC Development Indonesia(*7)	100.00	-	Indonesia	12.31	Construction service
GS Construction Middle East L.L.C.(*4)(*7)	49.00	-	UAE	12.31	Construction
GS Property Mountain View LLC(*7)	100.00	-	USA	12.31	Construction
GS MIRAMAR 700 EC, LLC(*7)	90.00	-	USA	12.31	Construction

(*1) The name has been changed from Ezville Inc to Xi S&D in 2018

(*2) The name has been changed from G-Estec Co., Ltd. to Xi -Estec Co., Ltd. in 2018

(*3) The name has been changed from GCS Plus to GCS in 2018

(*4) 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.

(*5) Liquidated and excluded from the consolidated subsidiaries in 2018

(*6) Includes securities held by subsidiaries.

(*7) Newly incorporated in 2018.

(*8) 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
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 Egoito 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
Inima Water Services, S.L.	Spain	Construction	12.31	100.00
GS Inima Water Management S.L	Spain	Construction	12.31	100.00
GS Inima Inversiones S.L.U.(*)	Spain	Construction	12.31	100.00
GS Inima Gestion S.L.U.(*)	Spain	Construction	12.31	100.00

(*) Newly incorporated in 2018.

GS Engineering & Construction Corporation and its subsidiaries
Notes to the consolidated financial statements
December 31, 2018 and 2017

1. General information (cont'd)

1.3 Summarized financial information

Summarized financial information of subsidiaries as of December 31, 2018 and 2017 are as follows (Korean won in millions):

Subsidiary	2018				
	Assets	Liabilities	Equity	Sales	Profit (loss) for the year
Xi S&D Inc. (*1)	₩ 137,744	₩ 99,528	₩ 38,216	₩ 212,696	₩ 10,716
Xi -Estec Co., Ltd. (*2)	878	477	401	4,961	35
GCS (*3)	21,534	6,837	14,697	68,747	3,704
BSM	3,687	1,983	1,704	15,581	1,386
Xi O&M	17,671	8,613	9,058	59,205	646
GS E&C Nanjing Co., Ltd.	225,354	171,860	53,494	771,146	32,896
GS Nha Be Development One-member LLC	152,238	141,770	10,468	-	(3,137)
GS Saigon Development One-member LLC	358,135	392,139	(34,004)	329	(29,150)
GS E&C Delhi Pvt. Ltd.	13,651	10,701	2,950	6,284	(8,318)
GS Engineering & Construction Mumbai Pvt. Ltd.	12,677	7,500	5,177	4,960	(10,537)
GS E&C Thai Co., Ltd.	32	-	32	-	(2)
GS EAST ASIA MANILA Inc.	-	-	-	-	(168)
GS E&C Malaysia SDN.BHD.	723	-	723	-	(56)
GS Construction Arabia Co., Ltd.	47,167	693,302	(646,135)	146,312	113,273
GS Saudi Co., Ltd.	7	4,413	(4,406)	-	-
GS E&C Poland SP.ZO.O	366	307	59	-	2
GS Engineering & Construction Spain, S.L	96,574	60,087	36,487	(13,586)	(38,370)
GS E&C Construction Canada Ltd.	172	1,361	(1,189)	-	(205)
GS E&C Panama S.A.	1,132	21	1,111	-	119
GS Inima Environment S.A. (*4)	635,099	394,225	240,874	231,246	20,563
GS Village Lake LLC	15,304	2,075	13,229	-	(58)
Pala-power General Construction Service (Proprietary) Limited	33	60	(27)	-	(11)
GS Engineering & Construction Australia Pty Ltd	5,808	6,425	(617)	-	(649)
PT. GSENC Development Indonesia	15,010	329	14,681	-	(685)
GS Construction Middle East L.L.C.	28,461	29,632	(1,171)	-	(1,243)
GS Property Mountain View LLC	15,628	-	15,628	-	(25)
GS MIRAMAR 700 EC, LLC	46,953	30,530	16,423	1,191	91

(*1) The name has been changed from Ezville Inc to Xi S&D in 2018

(*2) The name has been changed from G-Estec Co., Ltd. to Xi -Estec Co., Ltd. in 2018

(*3) The name has been changed from GCS Plus to GCS in 2018

(*4) Includes financial information of subsidiaries.

GS Engineering & Construction Corporation and its subsidiaries
Notes to the consolidated financial statements
December 31, 2018 and 2017

1. General information (cont'd)

1.3 Summarized financial information (cont'd)

Subsidiary	2017				
	Assets	Liabilities	Equity	Sales	Profit (loss) for the year
Xi S&D Inc. (*1)	₩ 92,383	₩ 65,000	₩ 27,383	₩ 141,725	₩ 8,411
Xi -Estec Co., Ltd. (*2)	980	616	364	5,909	21
GCS (*3)	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. (*4)	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)

(*1) The name has been changed from Ezville Inc to Xi S&D in 2018

(*2) The name has been changed from G-Estec Co., Ltd. to Xi -Estec Co., Ltd. in 2018

(*3) The name has been changed from GCS Plus to GCS in 2018

(*4) 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

2.1 Basis of preparation

The Group prepares statutory consolidated 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 consolidated financial statements have been translated into English from the Korean language consolidated financial statements. In the event of any differences in interpreting the consolidated financial statements or the independent auditor's report thereon, the Korean version, which is used for regulatory reporting purposes, shall prevail.

The consolidated 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 consolidated 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 consolidated financial statements comprise the financial statements of the Company and its subsidiaries as of December 31, 2018. 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 of 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 Company. 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

The Group classifies all other liabilities as non-current.

Deferred tax assets and liabilities are classified as non-current assets and liabilities.

2.3.5 Fair value measurement

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 consolidated 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 consolidated 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 consolidated 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).

In determining the spot exchange rate to use on initial recognition of the related asset, expense or income (or part of it) on the derecognition of a non-monetary asset or non-monetary liability relating to advance consideration, the date of the transaction is the date on which the Group initially recognizes the non-monetary asset or non-monetary liability arising from the advance consideration. If there are multiple payments or receipts in advance, The Group determines the transaction date for each payment or receipt of advance consideration.

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 products: Initial recognition and subsequent measurement

(1) Financial assets

1) Initial recognition and measurement

Financial assets are classified, at initial recognition, as subsequently measured at amortized cost, fair value through other comprehensive income (OCI), and fair value through profit or loss.

The classification of financial assets at initial recognition depends on the financial asset's contractual cash flow characteristics and the Group's business model for managing them. With the exception of trade receivables that do not contain a significant financing component or for which the Group has applied the practical expedient, the Group initially measures a financial asset at its fair value plus, in the case of a financial asset not at fair value through profit or loss, transaction costs. Trade receivables that do not contain a significant financing component or for which the Group has applied the practical expedient are measured at the transaction price determined under KIFRS 1115.

In order for a financial asset to be classified and measured at amortized cost or fair value through OCI, it needs to give rise to cash flows that are 'solely payments of principal and interest (SPPI)' on the principal amount outstanding. This assessment is referred to as the SPPI test and is performed at an instrument level.

The Group's business model for managing financial assets refers to how it manages its financial assets in order to generate cash flows. The business model determines whether cash flows will result from collecting contractual cash flows, selling the financial assets, or both.

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.

2) Subsequent measurement

For purposes of subsequent measurement, financial assets are classified in four categories:

- Financial assets at amortized cost (debt instruments)
- Financial assets at fair value through OCI with recycling of cumulative gains and losses (debt instruments)
- Financial assets designated at fair value through OCI with no recycling of cumulative gains and losses
- Financial assets at fair value through profit or loss

① Financial assets at amortized cost (debt instruments)

This category is the most relevant to the Group. The Group measures financial assets at amortized cost if both of the following conditions are met:

- The financial asset is held within a business model with the objective to hold financial assets in order to collect contractual cash flows and
- The contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding

Financial assets at amortized cost are subsequently measured using the effective interest (EIR) method and are subject to impairment. Gains and losses are recognized in profit or loss when the asset is derecognized, modified or impaired.

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 products: Initial recognition and subsequent measurement (cont'd)

② Financial assets at fair value through OCI (debt instruments)

The Group measures debt instruments at fair value through OCI if both of the following conditions are met:

- The financial asset is held within a business model with the objective of both holding to collect contractual cash flows and selling and
- The contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding

For debt instruments at fair value through OCI, interest income, foreign exchange revaluation and impairment losses or reversals are recognized in the statement of profit or loss and computed in the same manner as for financial assets measured at amortized cost. The remaining fair value changes are recognized in OCI. Upon derecognition, the cumulative fair value change recognized in OCI is recycled to profit or loss.

The Group's debt instruments at fair value through OCI includes investments in quoted debt instruments included under other non-current financial assets.

③ Financial assets designated at fair value through OCI (equity instruments)

Upon initial recognition, the Group can elect to classify irrevocably its equity investments as equity instruments designated at fair value through OCI when they meet the definition of equity under KIFRS 1032 Financial Instruments: Presentation and are not held for trading. The classification is determined on an instrument-by-instrument basis.

Gains and losses on these financial assets are never recycled to profit or loss. Dividends are recognized as other income in the statement of profit or loss when the right of payment has been established, except when the Group benefits from such proceeds as a recovery of part of the cost of the financial asset, in which case, such gains are recorded in OCI. Equity instruments designated at fair value through OCI are not subject to impairment assessment.

The Group elected to classify irrevocably its non-listed equity investments under this category.

④ Financial assets at fair value through profit or loss

Financial assets at fair value through profit or loss include financial assets held for trading and financial assets designated upon initial recognition at fair value through profit or loss. Financial assets are classified as held for trading if they are acquired for the purpose of selling or repurchasing in the near term. Derivatives, including separated embedded derivatives, are also classified as held for trading unless they are designated as effective hedging instruments. Financial assets with cash flows that are not solely payments of principal and interest are classified and measured at fair value through profit or loss, irrespective of the business model. Notwithstanding the criteria for debt instruments to be classified at amortized cost or at fair value through OCI, as described above, debt instruments may be designated at fair value through profit or loss on initial recognition if doing so eliminates, or significantly reduces, an accounting mismatch.

Financial assets at fair value through profit or loss are carried in the statement of financial position at fair value with net changes in fair value recognized in the statement of profit or loss.

This category includes derivatives and equity instruments that do not have irrevocable elections that treat changes in fair value as other comprehensive income. Dividends on equity instruments are recognized in profit or loss when the right is determined.

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 products: Initial recognition and subsequent measurement (cont'd)

A derivative embedded in a hybrid contract, with a financial liability or non-financial host, is separated from the host and accounted for as a separate derivative if: the economic characteristics and risks are not closely related to the host; a separate instrument with the same terms as the embedded derivative would meet the definition of a derivative; and the hybrid contract is not measured at fair value through profit or loss. Embedded derivatives are measured at fair value with changes in fair value recognized in profit or loss. Reassessment only occurs if there is either a change in the terms of the contract that significantly modifies the cash flows that would otherwise be required or a reclassification of a financial asset out of the fair value through profit or loss category.

A derivative embedded within a hybrid contract containing a financial asset host is not accounted for separately. The financial asset host together with the embedded derivative is required to be classified in its entirety as a financial asset at fair value through profit or loss.

3) Derecognition

A financial asset (or, where applicable, a part of a financial asset or part of a group of similar financial assets) is primarily derecognized (i.e., removed from the Group's consolidated statement of financial position) 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 Group continues to recognize the transferred asset to the extent of its continuing involvement. 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.

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.

4) Impairment of financial assets

The Group has applied the new expected credit loss (ECL) model of KIFRS 1109 in three types. The expected credit loss model applied to each type of financial asset is as follows.

① Trade receivables

For the purpose of measuring the expected credit losses of trade receivables under KIFRS 1109, the Group entity applies the practical expedient and uses the expected credit loss model for the life-time for trade receivables subject to the expected credit loss model.

② Debt instruments other than trade receivables

For credit exposures for which there has not been a significant increase in credit risk since initial recognition, ECLs are provided for credit losses that result from default events that are possible within the next 12-months (a 12-month ECL). For those credit exposures for which there has been a significant increase in credit risk since initial recognition, a loss allowance is required for credit losses expected over the remaining life of the exposure, irrespective of the timing of the default (a lifetime ECL).

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 products: Initial recognition and subsequent measurement (cont'd)

(2) Financial liabilities

1) Initial recognition and measurement

Financial liabilities are classified, at initial recognition, as financial liabilities at fair value through profit or loss, 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, net of directly attributable transaction costs.

The Group's financial liabilities include trade and other payables, loans and borrowings including bank overdrafts, financial guarantee contracts and derivative financial instruments.

2) 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.

- 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.

- Financial liabilities at fair value through profit or loss

Financial liabilities at fair value through profit or loss include financial liabilities held for trading and financial liabilities designated upon initial recognition as of fair value through profit or loss.

Financial liabilities are classified as held for trading if they are incurred for the purpose of repurchasing in the near term. This category also includes derivative financial instruments entered into by the Group that are not designated as hedging instruments in hedge relationships as defined by KIFRS 1109. Separated embedded derivatives are also classified as held for trading unless they are designated as effective hedging instruments. Gains or losses on liabilities held for trading are recognized in the statement of profit or loss.

Gains and losses arising from short-term financial liabilities are recognized in profit or loss.

Financial liabilities designated upon initial recognition at fair value through profit or loss are designated at the initial date of recognition, and only if the criteria in KIFRS 1109 are satisfied. The Group has not designated any financial liability as of fair value through profit or loss.

3) 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.

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 products: Initial recognition and subsequent measurement (cont'd)

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

In accordance with the transition rules, the consolidated financial statements have been prepared by applying the requirements of KIFRS 1039 to hedge accounting without applying the requirements of KIFRS 1109.

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 separate statements of profit or loss within 'OCI' 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) 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. Basis of preparation and a summary of significant accounting policies (cont'd)

2.3 Summary of significant accounting policies (cont'd)

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.

2.3.11 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.

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

2.3 Summary of significant accounting policies (cont'd)

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 to 15years

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.

2.3.15 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 of December 31, either individually or at the CGU level.

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

2.3 Summary of significant accounting policies (cont'd)

2.3.16 Pension benefits

The Group operates a defined benefit pension plan. Generally, the amount calculated by periodic actuarial calculations is raised through payments to funds managed by insurance companies or trustees.

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.

2.3.17 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 separate asset, but only when the reimbursement is virtually certain. The expense relating to a provision is presented in the separate 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.

(1) Warranty provision

The Group provides warranties for general repairs of defects that existed at the time of sale, as required by law. Provisions related to these assurance-type warranties are recognized when the product is sold or the service is provided to the customer. Initial recognition is based on historical experience. The initial estimate of warranty-related costs is revised annually.

(2) Onerous contracts

If the Group has a contract that is onerous, the present obligation under the contract is recognized and measured as a provision. However, before a separate provision for an onerous contract is established, the Group recognizes any impairment loss that has occurred on assets dedicated to that contract

An onerous contract is a contract under which the unavoidable costs (i.e., the costs that the Group cannot avoid because it has the contract) of meeting the obligations under the contract exceed the economic benefits expected to be received under it. The unavoidable costs under a contract reflect the least net cost of exiting from the contract, which is the lower of the cost of fulfilling it and any compensation or penalties arising from failure to fulfil it.

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

(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.

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 OCI 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. 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

(1) Identifying performance obligations

The Group's major businesses are civil engineering, construction, housing and overseas construction. Majority of construction contracts with customers meet the requirements of a single contract and are identified as a single obligation to carry out.

(2) Obligation to perform Over Time

Construction contracts for the Group include condominiums, commercial facilities, factories, roads and bridges those are ordered by customers, and usually require about three to four years of construction.

In accordance with KIFRS 1115, the timing of revenue recognition may vary depending on whether each performance obligation is satisfied at a point in time or over a period of time.

Performance of obligations over time shall meet any of the following criteria:

- The customer simultaneously receives and consumes the benefits provided by the entity's performance as the entity performs.
- The Group's performance creates or enhances an asset that the customer controls as the asset is created or enhanced.
- The Group'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.

Majority of construction contracts in the Group are obliged to provide construction and maintenance services to the customer during the contract period. And the asset is judged to be controllable by the customer as soon as the Group creates or increases its value. So, the Group recognizes the transaction price allocated to the performance obligation by revenue over a contract period.

Meanwhile, the Group recognized revenue through obligation to perform at a point in time(delivery basis) for contracts that do not meet the requirements to recognize revenue over the period of time.

(3) Percentage-of-completion measurement using input method

In accordance with KIFRS 1115, revenue is recognized when the goods or services promised to the customer are transferred and the performance obligation is fulfilled or when the performance obligation is fulfilled over a period of time. The obligation to perform during the period is to measure the percentage-of-completion until the obligation is fulfilled and the revenue is recognized over the period. The method of measuring the percentage-of-completion includes the output method and the input method, and they are applied if the percentage-of-completion of the performance obligation can be reasonably measured. In most construction contracts, the Group applies percentage-of-completion measurement.

In accordance with KIFRS 1115, if the Group expects that the goods are not distinct at contract inception and the entity is expected to significantly control the goods or services before transferring to the customer, and that the costs of the goods transferred are significant in comparison to the total costs expected to be fully satisfied, and that the entity receives the goods from a third party and does not significantly engage in the design and production of those goods, then recognizing the cost of the goods used to fulfill the performance obligation as revenue demonstrates the entity's performance well.

The construction contracts in plant sector are contracts including the purchase and installation of special equipment, and most of the projects are carried out over a long period of time of 3 years or more. The Group carries out the accounting by considering total planning costs versus special equipment costs, whether the customer has significant control over the special equipment under separate contracts, and whether the Group is deeply involved in design and production of the special equipment.

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)

(4) Incremental Cost of Obtaining a Contract and Contract Fulfillment Cost

The Group capitalizes the incremental costs of obtaining a contract or contract costs incurred directly related to contract and created resources used to fulfill a contract and expected to be recovered. If capitalization requirements are not met, it is accounted for as current expenses.

2.4 New and amended standards and interpretations

2.4.1 KIFRS 1115 Revenue from Contracts with Customers (amendment)

KIFRS 1115 supersedes KIFRS 1011 Construction Contracts, KIFRS 1018 Revenue and related Interpretations and it applies, with limited exceptions, to all revenue arising from contracts with its customers. KIFRS 1115 establishes a five-step model to account for revenue arising from contracts with customers and requires that revenue be 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.

KIFRS 1115 requires the Group to exercise judgement, taking into consideration all of the relevant facts and circumstances when applying each step of the model (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) to contracts with their customers. The standard also specifies the accounting for the incremental costs of obtaining a contract and the costs directly related to fulfilling a contract. In addition, the standard requires extensive disclosures.

The Group adopted KIFRS 1115 using the modified retrospective method of adoption with the date of initial application of January 1, 2018. Under this method, the standard can be applied either to all contracts at the date of initial application or only to contracts that are not completed at this date. The Group elected to apply the standard to all contracts as of January 1, 2018.

The cumulative effect of initially applying KIFRS 1115 is recognized at the date of initial application as an adjustment to the opening balance of retained earnings. Therefore, the comparative information was not restated and continues to be reported under KIFRS 1011, KIFRS 1018 and related Interpretations.

Major impact of the standard on the consolidated financial statements are disclosed in Note 35.

2.4.2 KIFRS 1109 Financial Instruments (amendment)

KIFRS 1109 Financial Instruments replaces KIFRS 1039 Financial Instruments: Recognition and Measurement for annual periods beginning on or after January 1, 2018, bringing together all three aspects of the accounting for financial instruments: classification and measurement; impairment; and hedge accounting.

The Group applied KIFRS 1109 prospectively, with an initial application date of January 1, 2018. The Group has not restated the comparative information, which continues to be reported under KIFRS 1039. Differences arising from the adoption of KIFRS 1109 have been recognized directly in retained earnings and other components of equity.

Major impact of the standard on the consolidated financial statements are disclosed in Note 35.

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

2.4 New and amended standards and interpretations (cont'd)

2.4.3 Amendments to KIFRS 2122 Foreign Currency Transactions and Advance Consideration

The Interpretation clarifies that, in determining the spot exchange rate to use on initial recognition of the related asset, expense or income (or part of it) on the derecognition of a non-monetary asset or non-monetary liability relating to advance consideration, the date of the transaction is the date on which an entity initially recognizes the non-monetary asset or non-monetary liability arising from the advance consideration. If there are multiple payments or receipts in advance, then the entity must determine the transaction date for each payment or receipt of advance consideration. The amendment has no effect on the Group's consolidated financial statements.

2.4.4 Amendments to KIFRS 1040 Investment Property — Transfers of Investment Property

The amendments clarify when an entity should transfer property, including property under construction or development into, or out of investment property. The amendments state that a change in use occurs when the property meets, or ceases to meet, the definition of investment property and there is evidence of the change in use. A mere change in management's intentions for the use of a property does not provide evidence of a change in use. The amendment has no effect on the Group's consolidated financial statements.

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

The 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 Group's accounting policy for cash-settled share based payments is consistent with the approach clarified in the amendments. In addition, the Group has no share-based payment transaction with net settlement features for withholding tax obligations and had not made any modifications to the terms and conditions of its share-based payment transaction. Therefore, these amendments do not have any impact on the Group's consolidated financial statements.

2.4.6 Amendments to KIFRS 1028 Investments in Associates and Joint Ventures - Clarification that measuring investees at fair value through profit or loss is an investment-by-investment choice

The amendments clarify that:

- An entity that is a venture capital organization, or other qualifying entity, may elect, at initial recognition on an investment-by-investment basis, to measure its investments in associates and joint ventures at fair value through profit or loss.
- If an entity, that is not itself an investment entity, has an interest in an associate or joint venture that is an investment entity, the entity may, when applying the equity method, elect to retain the fair value measurement applied by that investment entity associate or joint venture to the investment entity associate's or joint venture's interests in subsidiaries. This election is made separately for each investment entity associate or joint venture, at the later of the date on which: (a) the investment entity associate or joint venture is initially recognized; (b) the associate or joint venture becomes an investment entity; and (c) the investment entity associate or joint venture first becomes a parent.

The amendment has no effect on the Group's consolidated financial statements.

2.4.7 Amendments to KIFRS 1101 First-time Adoption of International Financial Reporting Standards - Deletion of short-term exemptions for first-time adopters

Amendments to KIFRS 1101 First-time Adoption of International Financial Reporting Standards - Deletion of short-term exemptions for first-time adopters. The amendment has no effect on the Group's consolidated financial statements.

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 of 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. As of December 31, 2018, the Group has no tax losses carried forward (December 31, 2017: 51,161 million). Further details on taxes are disclosed in Note 28.

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 consolidated financial statements are disclosed below. The Group intends to adopt these standards, if applicable, when they become effective.

4.1 KIFRS 1116 Leases

The Group as a lessee

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. KIFRS 1116 sets out the principles for the recognition, measurement, presentation and disclosure of leases and requires lessees to account for all leases under a single on-balance sheet model similar to the accounting for finance leases under KIFRS 1017. The standard includes two recognition exemptions for lessees – leases of 'low-value' assets (e.g., personal computers) and short-term leases (i.e., leases with a lease term of 12 months or less). At the commencement date of a lease, a lessee will recognize 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). Lessees will be required to separately recognize the interest expense on the lease liability and the depreciation expense on the right-of-use asset.

Lessees will be also required to remeasure the lease liability upon the occurrence of certain events (e.g., a change in the lease term, a change in future lease payments resulting from a change in an index or rate used to determine those payments). The lessee will generally recognize the amount of the remeasurement of the lease liability as an adjustment to the right-of-use asset.

Lessor accounting under KIFRS 1116 is not significantly changed from today's accounting under KIFRS 1017. Lessors will continue to classify all leases using the same classification principle as in KIFRS 1017 and distinguish between two types of leases: operating and finance leases.

KIFRS 1116 is effective for annual periods beginning on or after January 1, 2019. KIFRS 1116 also requires lessees and lessors to make more extensive disclosures than under KIFRS 1017.

The Group will elect to use the exemptions proposed by the standard on lease contracts for which the lease terms ends within 12 months as of the date of initial application, and lease contracts for which the underlying asset is of low value. The Group has leases of certain office equipment (i.e., personal computers, printing and photocopying machines) that are considered of low value. The Group is analyzing the effect on the consolidated statement, but it is difficult in practice to provide a reasonable estimate of the financial impact until this analysis is completed.

The Group as a lessor

The Group assesses that the accounting for the identification of lease contracts and separation of lease components in accordance with KIFRS 1116 as significantly different and is currently under analysis. It is difficult in practice to provide reasonable estimates of financial impact until the Group completes this analysis.

If the Group is an intermediate lease provider, the Group re-determines whether the sublease, which is valid on the initial application date and was classified as an operating lease before the initial application date, is an operating lease or a finance lease in accordance with KIFRS 1116. If the lease is classified as a finance lease, it will be accounted for as a new finance lease at the date of initial application.

4.2 Amendments to KIFRS 1109: Prepayment Features with Negative Compensation

Under KIFRS 1109, a debt instrument can be measured at amortized cost or at fair value through other comprehensive income, provided that the contractual cash flows are 'solely payments of principal and interest on the principal amount outstanding' (the SPPI criterion) and the instrument is held within the appropriate business model for that classification. The amendments to KIFRS 1109 clarify that a financial asset passes the SPPI criterion regardless of the event or circumstance that causes the early termination of the contract and irrespective of which party pays or receives reasonable compensation for the early termination of the contract.

The amendments should be applied retrospectively and are effective from January 1, 2019, with earlier application permitted.

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

4.3 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.

4.4 Amendments to KIFRS 1019: Plan Amendment, Curtailment or Settlement

The amendments to KIFRS 1019 address the accounting when a plan amendment, curtailment or settlement occurs during a reporting period. The amendments specify that when a plan amendment, curtailment or settlement occurs during the annual reporting period, an entity is required to:

- Determine current service cost for the remainder of the period after the plan amendment, curtailment or settlement, using the actuarial assumptions used to remeasure the net defined benefit liability (asset) reflecting the benefits offered under the plan and the plan assets after that event
- Determine net interest for the remainder of the period after the plan amendment, curtailment or settlement using: the net defined benefit liability (asset) reflecting the benefits offered under the plan and the plan assets after that event; and the discount rate used to remeasure that net defined benefit liability (asset).

The amendments also clarify that an entity first determines any past service cost, or a gain or loss on settlement, without considering the effect of the asset ceiling. This amount is recognized in profit or loss. An entity then determines the effect of the asset ceiling after the plan amendment, curtailment or settlement. Any change in that effect, excluding amounts included in the net interest, is recognized in other comprehensive income.

4.5 Amendments to KIFRS 1028: Long-term interests in associates and joint ventures

The amendments clarify that an entity applies KIFRS 1109 to long-term interests in an associate or joint venture to which the equity method is not applied but that, in substance, form part of the net investment in the associate or joint venture (long-term interests). This clarification is relevant because it implies that the expected credit loss model in KIFRS 1109 applies to such long-term interests.

The amendments also clarified that, in applying KIFRS 1109, an entity does not take account of any losses of the associate or joint venture, or any impairment losses on the net investment, recognized as adjustments to the net investment in the associate or joint venture that arise from applying KIFRS 1028 Investments in Associates and Joint Ventures.

4.6 IFRIC Interpretation 23 Uncertainty over Income Tax Treatment

The Interpretation addresses the accounting for income taxes when tax treatments involve uncertainty that affects the application of KIFRS 1012 and does not apply to taxes or levies outside the scope of KIFRS 1012, nor does it specifically include requirements relating to interest and penalties associated with uncertain tax treatments. The Interpretation specifically addresses the following:

- Whether an entity considers uncertain tax treatments separately
- The assumptions an entity makes about the examination of tax treatments by taxation authorities
- How an entity determines taxable profit (tax loss), tax bases, unused tax losses, unused tax credits and tax rates
- How an entity considers changes in facts and circumstances

The Group has to determine whether to consider each uncertain tax treatment separately or together with one or more other uncertain tax treatments. The approach that better predicts the resolution of the uncertainty should be followed. The interpretation is effective for annual reporting periods beginning on or after January 1, 2019, but certain transition reliefs are available.

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

4.7 Annual Improvements 2015-2017 Cycle (issued in December 2017)

These improvements include:

(1) KIFRS 1103 Business Combinations

The amendments clarify that, when an entity obtains control of a business that is a joint operation, it applies the requirements for a business combination achieved in stages, including remeasuring previously held interests in the assets and liabilities of the joint operation at fair value. In doing so, the acquirer remeasures its entire previously held interest in the joint operation.

An entity applies those amendments to business combinations for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after January 1, 2019, with early application permitted.

(2) KIFRS 1111 Joint Arrangements

A party that participates in, but does not have joint control of, a joint operation might obtain joint control of the joint operation in which the activity of the joint operation constitutes a business as defined in KIFRS 1103. The amendments clarify that the previously held interests in that joint operation are not remeasured.

An entity applies those amendments to transactions in which it obtains joint control on or after the beginning of the first annual reporting period beginning on or after January 1, 2019, with early application permitted.

(3) KIFRS 1012 Income Taxes

The amendments clarify that the income tax consequences of dividends are linked more directly to past transactions or events that generated distributable profits than to distributions to owners. Therefore, an entity recognizes the income tax consequences of dividends in profit or loss, other comprehensive income or equity according to where the entity originally recognized those past transactions or events.

An entity applies those amendments for annual reporting periods beginning on or after January 1, 2019, with early application is permitted. When an entity first applies those amendments, it applies them to the income tax consequences of dividends recognized on or after the beginning of the earliest comparative period.

(4) KIFRS 1023 Borrowing Costs

The amendments clarify that an entity treats as part of general borrowings any borrowing originally made to develop a qualifying asset when substantially all of the activities necessary to prepare that asset for its intended use or sale are complete.

An entity applies those amendments to borrowing costs incurred on or after the beginning of the annual reporting period in which the entity first applies those amendments. An entity applies those amendments for annual reporting periods beginning on or after January 1, 2019, with early application permitted.

GS Engineering & Construction Corporation and its subsidiaries
Notes to the consolidated financial statements
December 31, 2018 and 2017

5. Segment information and Revenue from Contracts with Customers

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

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

(*) the power segment was integrated into the plant construction segment for the year ended December 31, 2018. The comparative period information has been restated to reflect these changes.

(2) Sales and operating profit (loss) for the years ended December 31, 2018 and 2017 are as follows (Korean won in millions):

2018							
	Infra works	Architectural & housing construction	Plant construction	Others	Total	Consolidation adjustments	Consolidated total
Sales	₩ 1,117,459	₩ 7,242,179	₩ 4,855,304	₩ 136,835	₩ 13,351,777	₩ (212,404)	₩ 13,139,373
Inter-company sales	(1,167)	(104,556)	(50,871)	(55,810)	(212,404)	212,404	-
Net sales	1,116,292	7,137,623	4,804,433	81,025	13,139,373	-	13,139,373
Operating profit (loss)(*)	23,927	802,664	243,384	(5,486)	1,064,489	-	1,064,489
Profit (loss) before income tax(*)	(33,908)	986,675	(103,653)	(14,065)	835,049	-	835,049

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

2017							
	Infra works	Architectural & housing construction	Plant construction	Others	Total	Consolidation adjustments	Consolidated total
Sales	₩ 1,319,383	₩ 6,715,668	₩ 3,710,257	₩ 139,866	₩ 11,885,174	₩ (205,718)	₩ 11,679,456
Inter-company sales	(21,121)	(70,163)	(55,316)	(59,118)	(205,718)	205,718	-
Net sales	1,298,262	6,645,505	3,654,941	80,748	11,679,456	-	11,679,456
Operating profit (loss)(*)	260	926,858	(606,620)	(1,829)	318,669	-	318,669
Profit (loss) before income tax(*)	(14,582)	954,635	(1,092,330)	(8,465)	(160,742)	-	(160,742)

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

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5. Segment information (cont'd)

(3) Assets and liabilities as of December 31, 2018 and 2017 are as follows (Korean won in millions):

	Infra works	Architectural & housing construction	Plant construction	Others	Total	Consolidation adjustment	Consolidated total
2018							
Assets	₩ 1,377,035	₩ 5,810,385	₩ 4,070,958	₩ 1,745,916	₩ 13,004,294	₩ (971,019)	₩ 12,033,275
Liabilities	908,036	820,549	6,028,778	1,730,939	9,488,302	(1,079,713)	8,408,589
2017							
Assets	₩ 1,435,473	₩ 6,023,291	₩ 4,200,603	₩ 2,790,692	₩ 14,450,059	₩ (753,444)	₩ 13,696,615
Liabilities	894,203	1,298,756	6,470,650	2,768,101	11,431,710	(974,811)	10,456,899

(4) Revenue of segments for the year ended December 31, 2018 is as follows (Korean won in millions):

	2018				
	Infra works	Architectural & housing construction	Plant construction	Others	Total
Major product & service					
Construction contract as a constructor	₩ 1,098,595	₩ 6,417,040	₩ 4,517,098	₩ -	₩12,032,733
Construction contract as a developer & constructor	-	570,833	-	-	570,833
Engineering service and others	13,351	98,324	280,228	-	391,903
Lease and others	4,347	51,425	7,107	33,823	96,702
Resort	-	-	-	47,202	47,202
	<u>₩ 1,116,293</u>	<u>₩ 7,137,622</u>	<u>₩ 4,804,433</u>	<u>₩ 81,025</u>	<u>₩13,139,373</u>
Timing of revenue recognition					
Recognition over time	1,097,867	6,952,970	4,551,673	-	12,602,510
Recognition at a point in time	18,426	184,652	252,760	81,025	536,863
	<u>₩ 1,116,293</u>	<u>₩ 7,137,622</u>	<u>₩ 4,804,433</u>	<u>₩ 81,025</u>	<u>₩13,139,373</u>

(5) Major customer constituting more than 10% of sales is as follows (Korean won in millions):

	2018		
	Sales	Ratio	Segment
Major customer 1	₩ 1,641,089	12.49%	Plant construction

(*) There are no major customers that account for more than 10% of sales for the year ended December 31, 2017.
Therefore, The comparative period information is not applicable.

(6) Geographic information for the years ended December 31, 2018 and 2017 are as follows (Korean won in millions):

	Korea	Middle East	China and South-East Asia	Others	Total
2018					
Sales	₩ 7,818,860	₩ 3,514,873	₩ 1,434,447	₩ 583,597	₩ 13,351,777
Inter-company sales	(177,665)	(13,936)	(19,053)	(1,750)	(212,404)
Net sales	<u>₩ 7,641,195</u>	<u>₩ 3,500,937</u>	<u>₩ 1,415,394</u>	<u>₩ 581,847</u>	<u>₩ 13,139,373</u>
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	<u>₩ 8,015,773</u>	<u>₩ 1,846,099</u>	<u>₩ 945,511</u>	<u>₩ 872,073</u>	<u>₩ 11,679,456</u>

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6. Restricted financial instruments

Details of restricted financial instruments as of December 31, 2018 and 2017 are as follows (Korean won in millions):

	Bank	2018	2017	Remarks
Short-term financial assets	Suhyup	₩ 555	₩ 101	Pledge of apartment sales income
	NH and others	49,360	30,779	Pledge of construction billing
	Shinhan	4,889	4,889	Leasehold deposits
	Shinhan	6,050	5,060	Loans for employees' housing
	Shinhan and others	30,000	30,000	Supports interest for cooperative firm
	SC	34,661	33,213	L/C issued for overseas sites
	Shinhan	1,600	2,300	Provisional attachment
	KEB Hana	20,000	20,000	Pledge of time deposits
	Woori	4,147	4,453	Credit card receivables of Elysian
	Banobras and others	2,064	4,937	Other deposits and others
		153,326	135,732	
Long-term financial assets	Shinhan	₩ 1,669	₩ -	Pledge of Collateral for HUG
	Shinhan	214	214	Leasehold deposits
	Shinhan and others	20	20	Deposit for overdraft
		1,903	234	
		₩ 155,229	₩ 135,966	

7. Trade and other receivables

(1) Trade and other receivables as of December 31, 2018 and 2017 are as follows (Korean won in millions):

		2018		
		Receivables	Allowance for doubtful accounts	Receivables, net
Current assets				
Trade receivables	Receivables from construction contracts	₩ 1,938,507	₩ (166,021)	₩ 1,772,486
	Receivables from apartment sales	196,979	(885)	196,094
	Unbilled amount related to construction	1,841,687	(114,381)	1,727,306
	Notes receivable	12,587	-	12,587
	Other trade receivable	12,643	(254)	12,389
		4,002,403	(281,541)	3,720,862
Other receivables	Other receivables	₩ 624,853	₩ (215,802)	₩ 409,051
	Accrued revenue	44,159	(22,767)	21,392
	Short-term loans	227,684	(81,605)	146,079
		896,696	(320,174)	576,522
		₩ 4,899,100	₩ (601,715)	₩ 4,297,384
Non-current assets				
Long-term trade and other receivables	Long-term trade receivables	₩ 76,053	₩ -	₩ 76,053
	Long-term loans	748,510	(269,215)	479,295
	Leasehold deposits	205,512	(2,562)	202,950
	Deposits provided for business	195,377	(7,346)	188,031
		₩ 1,225,452	₩ (279,123)	₩ 946,329

7. Trade and other receivables (cont'd)

		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

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

		2018		2017	
		Trade receivables	Other receivables	Trade receivables	Other Receivables
Receivables not impaired					
Up to 1 year	₩	3,375,046	₩ 400,355	₩ 3,605,098	₩ 314,489
1 to 2 years		110,292	75,988	158,209	84,593
Over 2 years		331,525	125,310	409,284	72,358
		3,816,863	601,653	4,172,591	471,440
Individually impaired		185,540	295,043	259,854	294,611
	₩	4,002,404	₩ 896,696	₩ 4,432,445	₩ 766,051
Allowance for doubtful accounts		₩ (281,541)	₩ (320,174)	₩ (156,822)	₩ (278,394)

7. Trade and other receivables (cont'd)

(3) Changes in allowance for doubtful accounts as of December 31, 2018 and 2017 are as follows (Korean won in millions):

		2018				
		Beginning	Effect of changes in accounting policies(*)	Allowance for doubtful accounts	Reversal / write-off	Ending
Trade and other receivables	Receivables from construction contracts	₩ 111,833	₩ 23,749	₩ 53,741	₩ (23,302)	₩ 166,021
	Receivables from apartment sales	-	750	146	(11)	885
	Unbilled amount related to construction	44,155	-	70,226	-	114,381
	Other receivables	173,635	21,917	27,310	(7,060)	215,802
	Accrued revenue	14,402	483	9,133	(1,251)	22,767
	Short-term loans	90,357	12,448	2,068	(23,268)	81,605
	Other trade receivables	834	-	1,135	(1,715)	254
		435,216	59,347	163,759	(56,607)	601,715
Long-term trade and other receivables	Long-term loans	₩ 243,216	₩ 26,778	₩ 8,938	₩ (9,717)	₩ 269,215
	Deposits provided for business	392	6,087	921	(54)	7,346
	Leasehold deposits	150	2,177	1,282	(1,047)	2,562
		243,758	35,042	11,141	(10,818)	279,123
		₩ 678,974	₩ 94,389	₩ 174,900	₩ (67,425)	₩ 880,838

(*) There is the effect of adopting KIFRS 1109 'Financial Instruments' (Note 35).

		2017			
		Beginning	Allowance for doubtful accounts	Reversal / write-off	Ending
Trade and other receivables	Receivables from construction contracts	₩ 128,392	₩ 6,668	₩ (23,227)	₩ 111,833
	Unbilled amount related to construction	-	44,800	(645)	44,155
	Other trade receivables	886	619	(671)	834
	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
	Leasehold deposits	-	150	-	150
	Deposits provided for business	2,243	-	(1,851)	392
		229,657	23,519	(9,418)	243,758
		₩ 515,465	₩ 234,840	₩ (71,331)	₩ 678,974

8. Construction contracts

(1) Changes in the outstanding balances of construction contracts for the years ended December 31, 2018 and 2017 are as follows (Korean won in millions):

2018					
	Beginning	Effect of changes in accounting policies(*)	Increase	Sales recognized	Ending
Infra works	₩ 3,089,020	₩ 17,137	₩ 720,817	₩ 1,097,867	₩ 2,729,107
Architectural construction	9,729,459	23,553	5,005,604	6,396,477	8,362,139
Plant construction	6,060,656	27,433	2,381,724	4,551,673	3,918,140
	18,879,135	68,123	8,108,145	12,046,017	15,009,386
Housing construction and sales operations	₩ 818,558	₩ 58,351	₩ 962,139	₩ 570,833	₩ 1,268,215
	₩ 19,697,693	₩ 126,474	₩ 9,070,284	₩ 12,616,850	₩ 16,277,601

(*) The effect of adopting KIFRS 1115 'Revenue from contracts with customers' (Note 35).

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	7,279,229	2,198,924	3,417,497	6,060,656	
	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	

(2) Details of construction contracts in progress as of December 31, 2018 and 2017 are as follows (Korean won in millions):

2018				
	Accumulated sales	Accumulated cost	Accumulated Profit (loss)	Reserve for receivables (*)
Infra works	₩ 9,569,014	₩ 9,161,986	₩ 407,028	₩ 115,731
Architectural construction	24,921,275	21,710,815	3,210,460	12,055
Plant construction	36,456,639	36,707,328	(250,689)	244,393
	70,946,928	67,580,129	3,366,799	372,179
Housing construction and sales operations	₩ 2,233,601	₩ 1,720,866	₩ 512,735	₩ -
	₩ 73,180,529	₩ 69,300,995	₩ 3,879,534	₩ 372,179

(*) Included in trade receivables.

2017				
	Accumulated sales	Accumulated cost	Accumulated Profit (loss)	Reserve for receivables (*)
Infra works	₩ 8,819,988	₩ 8,483,652	₩ 336,336	₩ 93,531
Architectural construction	20,338,279	17,859,141	2,479,138	19,383
Plant construction	35,114,687	35,597,739	(483,052)	259,412
	64,272,954	61,940,532	2,332,422	372,326
Housing construction and sales operations	₩ 1,834,396	₩ 1,386,497	₩ 447,899	₩ -
	₩ 66,107,350	₩ 63,327,029	₩ 2,780,321	₩ 372,326

(*) Included in trade receivables.

8. Construction contracts (cont'd)

(3) Details of unbilled and overbilled amount related to construction as of December 31, 2018 and 2017 are as follows (Korean won in millions):

	2018		2017		Advanced from construction contracts
	Contract assets	Contract liabilities	Unbilled amount	Overbilled amount	
Infra works	₩ 369,510	₩ 137,871	₩ 304,137	₩ 116,243	₩ 42,259
Architectural & housing construction	309,658	1,382,571	353,561	1,164,182	53,739
Plant construction	1,048,138	665,553	863,238	534,023	509,722
	₩ 1,727,306	₩ 2,185,995	₩ 1,520,936	₩ 1,814,448	₩ 605,720

As of December 31, 2018, the unbilled amount from housing construction and sales operations is ₩192,736 million (₩93,418 million in 2017) and overbilled amount from housing construction and sales operations is ₩164,038 million (₩50,635 million in 2017).

(4) The costs of fulfilling a contract which the Group has recognized as an asset, is ₩115,776 million as of December 31, 2018. In connection with construction contracts, the Group recognized cost directly related to the contract (or expected contract) and that creates or increases the value of the entity's resources to be used in fulfilling its future performance obligations and recoverable, as costs to fulfill a contract.

(5) Details of major joint construction contracts as of December 31, 2018 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	₩ 6,734,812	₩ 2,525,554	37.50%	Hyundai E&C
Clean Fuels Project(MAA)	4,826,931	1,608,977	33.33%	JGC
NSRP Project	5,541,661	1,385,415	25.00%	JGC
P10-Project	1,854,930	946,014	51.00%	The Group
STAR Project	2,356,592	785,531	33.33%	The Group
PP-12 Combined Thermal Power Plant	1,371,726	685,863	50.00%	Arabian Bemco Contracting Co. Ltd.
Qatar Doha Metro	2,206,596	551,649	25.00%	QDVC
Marina South Parcel	1,377,223	550,889	40.00%	Hyundai E&C
P8E C/R & Utility Construction	883,568	530,141	60.00%	The Group
Gaepo 8 complex	2,534,756	844,919	33.33%	Hyundai E&C

(6) 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, 2018 and 2017 are as follows (Korean won in millions):

	2018					
	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	₩ 3,790	₩ 142,046	₩ 122,815	₩ (17,391)	₩ 36,622	₩ (17,391)
Infra works	11,660	1,054,855	352,046	283,770	419,039	283,770
Plant construction	71,333	1,422,820	1,165,291	108,018	149,511	108,018
	₩ 86,783	₩ 2,619,721	₩ 1,640,152	₩ 374,397	₩ 605,172	₩ 374,397

8. Construction contracts (cont'd)

		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	₩ 5,562	₩ 21,669	₩ 64,259	₩ (54,137)	₩ 11,547	₩ (54,137)	
Infra works	6,296	805,271	(349,208)	557,430	597,049	557,430	
Plant construction	64,664	34,638	801,254	(769,362)	2,746	(769,362)	
	₩ 76,522	₩ 861,578	₩ 516,305	₩ (266,069)	₩ 611,342	₩ (266,069)	

(7) 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, 2018 and 2017 are as follows (Korean won in millions):

		2018						
					Unbilled amount related to construction	Receivables from construction contracts		
		Contract date	Contract due	Progress Rate (%)	Amount	Accumulated impairment	Amount	Allowance for doubtful accounts
Infra works	Thomson-East Coast line							
	Contract T301	2016-03-18	2024-02-28	34.71	₩ 105,174	₩ -	₩ 29,500	₩ -
	Doha Link project (*)	2014-12-30	2019-03-31	93.72	23,564	-	68,095	-
Architectural-construction	P10-Project	2015-10-20	2020-06-30	88.79	8,789	-	2,805	16
	Gran City Xi	2016-10-01	2020-02-29	60.95	1,212	-	81,710	831
	Gran City Xi 2 nd	2017-05-01	2020-10-31	29.65	-	-	12	-
	Marina South Parcel	2013-08-01	2018-05-30	88.79	11,874	-	12,504	-
	Gaepo 8 complex GP3	2018-03-14	2021-07-31	3.65	-	-	-	-
Plant	(Architectural-construction)	2017-07-07	2019-12-31	81.23	31,357	-	72,882	-
	Karbala Refinery Project(*)	2014-04-22	2019-12-31	58.8	-	-	100,166	-
	ERC Refinery Project(*)	2007-08-29	2019-06-30	95.89	192,848	-	5,836	-
	RRW Unit Restoration	2017-06-29	2019-01-10	87.83	552,894	-	24,277	-
	Clean Fuels Project(MAA) (*)	2014-04-13	2019-06-30	86.62	-	-	10,039	-
	NSRP Project	2013-07-22	2018-11-14	98.17	-	-	-	-
	Rumaitha/Shanayel Facilities Phase III	2014-04-14	2018-06-28	96.85	-	-	5,042	-
	LPIC Project PKG 3	2015-12-17	2019-12-03	69.17	-	-	23,374	-
	KOC Wara Pressure Maintenance Project(*)	2011-09-15	2019-06-30	99.19	69,499	69,499	1,509	-
	Bahrain LNGIT Project	2015-12-02	2019-02-15	92.59	12,963	-	-	-
	Star ProjectC(*)	2013-05-20	2019-06-30	96.51	36,915	-	4,774	-
	PP-12 Combined Thermal Power Plant (*)	2012-05-16	2019-06-30	97.52	84,507	-	-	-
	Anyang Cogeneration Power Plant No.2							
	Construction	2014-09-22	2021-10-31	62.45	-	-	-	-

(*) Expected construction period.

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8. Construction contracts (cont'd)

						2017			
						Unbilled amount related to construction	Receivables from construction contracts		
		Contract date	Contract due	Progress Rate (%)	Amount	Accumulated impairment	Amount	Allowance for doubtful accounts	
Infra works	Thomson-East Coast line								
	Contract T301	2016-03-18	2024-02-28	15.42	₩ 36,860	₩	- ₩ 23,200	₩	-
Architectural- construction	Doha Link project	2014-12-30	2018-12-31	71.67	-	-	75,180	-	-
	Misa-Riverside Central Xi	2014-10-01	2017-02-27	100	-	-	-	-	-
	Gran City Xi	2016-10-01	2020-02-29	23.01	-	-	6	-	-
	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	-	-	-	-
Plant	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	-	-	-	-	-
	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	99.1	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	-	-
	PP-12 Combined								
	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	-	-

(*) 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 of December 31, 2018 and 2017 are as follows (Korean won in millions):

	2018	2017
Land held for development	₩ 324,177	₩ 758,058
Finished housing	50,079	1,253
Goods and products	835	851
Raw materials	71,999	58,645
Unfinished housing construction	586,754	271,527
Supplies	351	364
	<u>₩ 1,034,195</u>	<u>₩ 1,090,698</u>

(2) Other current assets as of December 31, 2018 and 2017 are as follows (Korean won in millions):

	2018	2017
Prepaid construction costs(*)	₩ 115,776	₩ 399,672
Advance payments	341,107	378,870
Prepaid expenses	68,826	108,495
Prepaid value added tax	65,938	87,972
Prepaid income taxes	17,115	15,113
	<u>₩ 608,762</u>	<u>₩ 990,122</u>

(*) The opening balance has been adjusted for the application of KIFRS1115 'Revenue from contracts with customers' (Note 35).

10. Categories of financial assets and liabilities

(1) Categories of financial assets as of December 31, 2018 and 2017 are as follows (Korean won in millions):

2018				
	Financial assets at fair value through profit or loss	Derivative financial instruments	Financial assets at amortized costs	Total
Cash and cash equivalents	₩ -	₩ -	₩ 1,592,619	₩ 1,592,619
Trade and other receivables (*1)	-	-	2,570,079	2,570,079
Short-term financial assets (*2)	-	6,922	241,452	248,374
Long-term trade and other receivables	-	-	946,330	946,330
Long-term financial assets	-	-	194,151	194,151
Financial assets at fair value through profit or loss	230,208	-	-	230,208
	₩ 230,208	₩ 6,922	₩ 5,544,631	₩ 5,781,761

(*1) Excludes unbilled amount related to construction.

(*2) Excludes firm commitments assets.

2017				
	Available-for-sale financial assets	Derivative financial instruments	Loans and other receivables	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)	-	61,329	199,476	260,805
Long-term trade and other receivables	-	-	963,196	963,196
Long-term financial assets	251,727	-	198,165	449,892
	₩ 251,727	₩ 61,329	₩ 7,045,479	₩ 7,358,535

(*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 of December 31, 2018 and 2017 are as follows (Korean won in millions):

2018					
	Financial liabilities at fair value through profit or loss	Derivative financial instruments	Other financial liabilities at amortized costs	Total	
Trade and other payables	₩ -	₩ -	₩ 2,023,490	₩	2,023,490
Short-term financial liabilities (*1)	42,267	3,142	1,044,364	₩	1,089,773
Other current liabilities (*2)	-	-	224,368	₩	224,368
Long-term financial liabilities	-	1,805	1,145,375	₩	1,147,180
Other non-current liabilities (*3)	-	-	266,485	₩	266,485
Non-current provision liabilities (*4)	-	-	232,245	₩	232,245
	₩ 42,267	₩ 4,947	₩ 4,936,327	₩	4,983,541

(*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.

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.

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, 2018 and 2017 are as follows (Korean won in millions):

	2018			
	Financial assets (liabilities) at fair value through profit or loss	Derivative financial instruments	Financial assets (liabilities) at amortized costs	Total
Interest income	₩ 96	₩ -	₩ 50,964	₩ 51,060
Interest expense	-	-	(135,042)	(135,042)
Gain (loss) on foreign currency translation	-	-	26,304	26,304
Gain (loss) on foreign currency transaction	-	-	(27,033)	(27,033)
Gain (loss) on derivatives valuation(*)	(30,946)	3,476	-	(27,470)
Gain (loss) on derivatives transaction	3,431	(68,893)	-	(65,462)
Dividend income	898	-	-	898
Other finance income (loss)	(35,971)	-	(162,680)	(198,651)
	<u>₩ (62,492)</u>	<u>₩ (65,417)</u>	<u>₩ (247,487)</u>	<u>₩ (375,396)</u>

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

	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.

11. Financial assets at fair value through profit or loss

(1) Details of Financial assets at fair value through profit or loss as of December 31, 2018 and 2017 are as follows (Korean won in millions):

	2018	2017
Government bonds	₩ 1,373	₩ 396
Debt securities	5,210	5,210
Non-marketable equity securities(*)	223,625	246,121
	₩ 230,208	₩ 251,727

(*) Impairment loss of ₩13,240 million was recognized for the year ended December 31, 2018.

(2) Changes in Financial assets at fair value through profit or loss for the years ended December 31, 2018 and 2017 are as follows (Korean won in millions):

	2018	2017
Beginning	₩ 251,727	₩ 226,807
Acquisition	24,660	65,418
Disposal	(19,503)	(26,998)
Impairment	-	(12,129)
Valuation	(27,242)	-
Changes in exchange rate	566	(1,371)
Ending	₩ 230,208	₩ 251,727

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11. Financial assets at fair value through profit or loss (cont'd)

(3) Details of non-marketable equity securities as of December 31, 2018, and 2017 are as follows (Korean won in millions):

Investee	Number Of shares	Equity Interest (%)	Acquisition cost		Book value (*1)	
			2018	2017	2018	2017
Dong Yang Engineering and Construction Corp.	545	0.02	₩ 3	₩ 3	₩ 3	₩ 3
CL Co., Ltd. (*2)	9,113	16.43	-	91	-	91
IoT Gwangmyeong co.,Ltd	37,962	19	191	-	191	-
Central Yongin Corp.	80,000	8.89	400	400	400	400
International Convention Center Jeju	100,000	0.27	500	500	500	500
The Korea Economic Daily	646	0	14	14	14	14
GS Cu Chi Development One-member Limited	-	-	-	713	-	615
KIAMCO Gyeonggi Railway Investment Private Investment Trust	8,104,011,384	10.31	8,107	8,107	1,192	8,107
Tropical Bintan Pte., Ltd.	625,000	12.5	2,444	2,444	-	-
Gaya Railway Co., Ltd.	305,490	2.3	1,527	1,527	230	1,527
Kangreung Sewage Pipe Co., Ltd.	50,682	3.3	253	253	253	253
Kyungggi Railroad Cd.,Ltd.	495,000	2.45	2,475	2,475	364	2,475
Keangnam Enterprise Ltd.	158	0	1	1	1	1
Gyeongbuk Green Energy	286,552	8.4	1,433	1,433	1,433	1,433
Gumi Green Water Co., Ltd.	335,412	18.9	1,677	1,677	1,677	1,677
Gumimakeunmul	116,721	40.5	584	-	584	-
Gunsan Green Energy Center Co., Ltd.	246,962	24.77	1,235	1,235	1,235	1,235
Green Energy Development Co., Ltd.	81,000	27	405	405	405	405
Nonsan Drain Co., Ltd.	91,868	11.9	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	10.2	2,372	2,372	-	2,372
Daejeon Green Energy Centre Ltd.	396,792	10.2	1,984	1,984	-	1,984
Daejeon Sewage Pipe Co., Ltd.	108,456	4	830	830	830	830
Dong-Ah Construction Industrial Co., Ltd.	-	-	-	1	-	1
Dream Hub Project Financial Investment	4,000,000	2	20,000	20,000	-	-
Masan Drain Co., Ltd.	220,890	8.14	1,104	1,104	390	1,104
Midan City Development Co., Ltd	2,391,480	13.4	13,240	13,240	-	-
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.	801,900	45	4,010	2,154	4,010	2,154
North Han-River Barraks	5,576	5.47	28	28	28	28
Blue Core PFV Co., Ltd.	1,000,000	10	5,000	5,000	5,000	5,000
Bichaenoori Co., Ltd.	11,500	11.5	58	58	-	-
Bichaenoori Development Co., Ltd.	657,800	11.5	3,289	3,289	-	-
S-Y highway Co., Ltd.	4,737,712	7	23,689	23,689	12,048	23,689
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	36.4	48,339	48,339	48,339	48,339
Seoul Northern Highway Co., Ltd.	2,730,560	5.6	13,653	13,653	12,861	13,653
Seoul Tunnel Co., Ltd.	1,147,200	6	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.	4,508	0.01	7	5	7	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	3,200	3,200	2,701	3,200
Alpha Dome City Co., Ltd.	13,175	0.98	66	66	-	-
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	-	-
Youngduk & Bio Co., Ltd.	34,870	4.22	174	174	174	174
Oksan Ochang Highway Corporation	5,988,000	60	29,940	29,940	24,844	29,940
Ulsan green Co., Ltd.	701,368	19.74	3,507	3,507	3,662	3,507
Wonju Green Co., Ltd.	226,376	11.03	1,132	1,132	349	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	6.3	336	336	336	336
Uiyeongbu LRT Inc.	8,663,394	47.54	45,226	45,226	-	-
Jeonju Sewage Pipe Co., Ltd.	207,060	7.9	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	13.32	14,472	14,472	14,472	14,472
Jinsung Construction Co., Ltd.	10,095	1.39	101	101	101	101
Paju-Yangju Powerful Army Co., Ltd.	89,289	8	447	447	-	447
Public Development Co., Ltd.	394,655	17.09	3,947	3,947	4,265	4,258
Pyeongtaek EOS	328,200	6	1,641	1,641	1,641	1,641

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11. Financial assets at fair value through profit or loss (cont'd)

Investee	Number Of shares	Equity Interest (%)	Acquisition cost		Book value (*1)	
			2018	2017	2018	2017
Clean Gimpo Co., Ltd.	403,032	22.81	1,949	1,949	2,036	1,949
Pureun seobu environment	13,488	1.3	68	67	68	67
Poonglim Industrial Co., Ltd.	184	0	1	1	1	1
Korea Investment Trust Management	9,960,000,000	29.07	9,960	9,960	9,960	9,960
Hwasung Ecotec Co.,LTD	8,689	0.9	43	43	43	43
Construction Guarantee Cooperative	16,363	0.42	17,095	17,095	24,244	17,247
Fire Guarantee Cooperative	40	0.01	20	20	20	20
Engineering Construction Financial Cooperative (*3)	13,700	1.16	6,612	6,612	8,409	6,612
Electric Construction Financial Cooperative	600	0.01	98	98	98	98
Information & Communication Financial Cooperative	440	0.04	61	61	61	61
Others (*4)	-	-	16,023	13,886	14,735	12,515
			<u>₩ 347,945</u>	<u>₩ 343,979</u>	<u>₩ 223,625</u>	<u>₩ 246,121</u>

(*1) The book value is the investee's net asset value or fair value.

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

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

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 financial assets at fair-value through profit of loss.

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 of December 31, 2018 and 2017 are as follows (Korean won in millions):

		2018								
		Valuation			Gain or loss			Accumulated other comprehensive income (*1)		
		Assets	Liabilities		Gain	Loss	Net	Gain	Loss	Net
Derivatives	For sale	₩	₩	₩	₩	₩	₩	₩	₩	₩
that are not	Put option	-	1,425	-	-	1,425	(1,425)	-	-	-
designated	(*2)	-	40,842	-	-	29,521	(29,521)	-	-	-
as hedging		-	42,267	-	-	30,946	(30,946)	-	-	-
instruments										
Derivatives	Cash flow	₩	₩	₩	₩	₩	₩	₩	₩	₩
that are	hedge	1,320	4,394	626	1,428	(802)	1,569	26,077	(24,508)	
designated	Fair value	5,602	553	5,376	1,098	4,278	-	-	-	-
as hedging	hedge	6,922	4,947	6,002	2,526	3,476	1,569	26,077	(24,508)	
instruments										
Firm commitments		₩	₩	₩	₩	₩	₩	₩	₩	₩
assets or liabilities		46,830	28,388	59,085	12,828	46,257	-	-	-	-
		₩ 53,752	₩ 75,602	₩ 65,087	₩ 45,300	₩ 18,787	₩ 1,569	₩ 26,077	₩ (24,508)	

(*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.

		2017								
		Valuation			Gain or loss			Accumulated other comprehensive income (*1)		
		Assets	Liabilities		Gain	Loss	Net	Gain	Loss	Net
Derivatives	For sale	₩	₩	₩	₩	₩	₩	₩	₩	₩
that are not	Put option	-	67	-	-	67	(67)	-	-	-
designated	(*2)	-	23,367	5,624	-	5,624	-	-	-	-
as hedging		-	23,434	5,624	67	5,557	-	-	-	-
instruments										
Derivatives	Cash flow	₩	₩	₩	₩	₩	₩	₩	₩	₩
that are	hedge	11,380	5,588	3,073	3,154	(81)	11,011	21,618	(10,607)	
designated	Fair value	49,949	15	52,421	-	52,421	-	-	-	-
as hedging	hedge	61,329	5,603	55,494	3,154	52,340	11,011	21,618	(10,607)	
instruments										
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.

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13. Investments in associates

(1) Changes in investments in associates for the years ended December 31, 2018 and 2017 are as follows (Korean won in millions):

	Equity Ownership (%)	2018				
		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	1,291	-	(1,291)	-	-
Sejong Industry Complex Corp.	20.00	-	-	-	-	-
Hakun 7 Industry Complex Co.,Ltd	20.00	9	190	(77)	-	122
Beopwon Industry Urban Development Corp.	20.00	34	-	(34)	-	-
HyangSan 2 Urban Development Corp.	50.00	5	-	(1)	-	4
Tongjin Industry Complex CO., Ltd (*1)	20.00	-	10	-	-	10
SoBaek Co., Ltd. (*1)	29.97	-	90	(90)	-	-
Yeouido MBC Site MXD PFV. Inc. (*1)(*2)	10.00	-	6,500	(52)	-	6,448
Gwancheon Sangsang PFV (*1)(*2)	19.00	-	2,030	(14)	-	2,016
FGS East Asia Technical Resource Management, Inc.	25.00	-	-	11	-	11
PT. Daria Mulia Properti (*1)	44.13	-	14,131	(94)	1	14,038
Cadiz San Fernando, A.I.E.	21.95	1,525	-	332	(321)	1,536
Participes de Biorreciclaje S.A.	33.33	5,745	-	719	(9)	6,455
Gestion de Participes de Biorreciclaje	33.33	-	-	-	-	-
Shariket Miyeh Ras Djinet, Spa	25.49	9,104	-	1,562	126	10,792
Shariket Tahlya Miyah Mostaganem, Spa	25.50	25,456	-	5,268	352	31,076
		₩ 43,169	₩ 22,951	₩ 6,239	₩ 149	₩ 72,508

(*1) Newly acquired in 2018.

(*2) The investee is classified as associate as the Group has significant influence over the the investee by the appointment of a director.

	Equity Ownership (%)	2017				
		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

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13. Investments in associates (cont'd)

(2) Changes in joint venture for the years ended December 31, 2018 and 2017 are as follows (Korean won in millions):

		2018			
	Equity ownership (%)	Beginning	Gain (loss) on equity method	Changes in equity	Ending
G&M Estate Co., Ltd.	50.00	₩ 522	₩ (14)	₩ -	₩ 508
GS Korea for Project Management Company	49.00	19	1	-	20
Hialeah Water, LLP	50.00	679	275	(500)	454
		₩ 1,220	₩ 262	₩ (500)	₩ 982

		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

(3) Equity method of accounting has been suspended due to accumulated losses, and unrecognized losses in equity for the years ended December 31, 2018 and 2017 are as follows (Korean won in millions):

	2018		
	Beginning	Increase (decrease)	Ending
Major Development Co., Ltd.	₩ 6,486	₩ 2,588	₩ 9,074
FGS East Asia Technical Resource Management, Inc.	338	(338)	-
GS KOCREF New Stay REIT Co., Ltd.	-	11,320	11,320
Beopwon Industry Urban Development Corp.	-	660	660
Sejong Industry Complex Corp.	-	23	23
SoBaek Co., Ltd.	-	1,112	1,112
Gestion de Participes de Biorreciclaje	11	-	11
	₩ 6,835	₩ 15,365	₩ 22,200

	2017		
	Beginning	Increase (decrease)	Ending
Major Development Co., Ltd.	₩ 6,871	₩ (385)	₩ 6,486
FGS East Asia Technical Resource Management, Inc.	108	230	338
Gestion de Participes de Biorreciclaje	11	-	11
	₩ 6,990	₩ (155)	₩ 6,835

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13. Investments in associates (cont'd)

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

		2018					Profit or loss for the year
		Assets	Liabilities	Net assets	Sales		
Associates	Major Development Co., Ltd.	₩ 51,387	₩ 74,073	₩ (22,686)	₩ -	₩ (1,900)	
	GS KOCREF New Stay REIT Co., Ltd.	319,352	259,639	59,713	453	(8,469)	
	Sejong Industry Complex Corp. (*)	99	213	(114)	-	(109)	
	Hakun 7 Industry Complex Co.,Ltd	1,306	696	610	-	(386)	
	Beopwon Industry Urban Development Corp.	53,578	56,967	(3,389)	-	(3,467)	
	HyangSan 2 Urban Development Corp.	97	90	7	-	(3)	
	Tongjin Industry Complex CO., Ltd (*)	50	-	49	-	(1)	
	SoBaek Co., Ltd. (*)	180,861	184,567	(3,706)	-	(4,006)	
	Yeouido MBC Site MXD PFV. Inc. (*)	70,741	6,257	64,484	-	(516)	
	Gwancheon Sangsang PFV (*)	6,929	-	6,929	-	(71)	
	FGS East Asia Technical Resource Management, Inc.	1,238	1,192	46	1,191	(67)	
	PT. Daria Mulia Properti (*)	22,127	14	22,113	-	(212)	
	Cadiz San Fernando, A.I.E.	10,804	3,808	6,996	5,726	1,514	
	Participes de Biorreciclaje S.A.	86,249	66,566	19,682	23,386	2,201	
	Gestion de Participes de Biorreciclaje	90	122	(32)	-	-	
	Shariket Miyeh Ras Djinet Spa	98,510	56,164	42,345	21,881	6,131	
	Shariket Tahlya Miyah Mostaganem, Spa	208,614	86,753	121,860	40,223	20,653	
Joint venture	G&M Estate Co., Ltd.	1,121	104	1,017	997	(27)	
	GS Korea for Project Management Company	79	39	40	132	1	
	Hialeah Water, LLP	1,314	407	907	-	549	

(*) Newly acquired in 2018.

		2017					Profit or loss for the year
		Assets	Liabilities	Net assets	Sales		
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	
	Gestion de Participes de Biorreciclaje	90	122	(32)	-	-	
	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	1,359	-		

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14. Property, plant and equipment

(1) Details of property, plant and equipment as of December 31, 2018 and 2017 are as follows (Korean won in millions):

	2018			2017		
	Acquisition cost	Accumulated depreciation	Net book value	Acquisition cost	Accumulated depreciation	Net book value
Land	₩ 456,855	₩ -	₩ 456,855	₩ 456,856	₩ -	₩ 456,856
Buildings	396,502	(148,553)	247,949	389,320	(136,681)	252,639
Structures	112,795	(43,476)	69,319	112,186	(40,741)	71,445
Machinery	42,512	(35,136)	7,376	57,019	(33,965)	23,054
Construction equipment	66,260	(42,025)	24,235	97,229	(43,333)	53,896
Vehicles	24,281	(18,871)	5,410	23,112	(18,104)	5,008
Tools	22,746	(16,886)	5,860	22,761	(16,534)	6,227
Equipment	130,551	(109,847)	20,704	132,211	(107,019)	25,192
Construction-in progress	3,340	-	3,340	3,202	-	3,202
	₩ 1,255,842	₩ (414,794)	₩ 841,048	₩ 1,293,896	₩ (396,377)	₩ 897,519

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

	2018					
	Beginning	Acquisition	Disposal	Depreciation	Exchange differences	Ending
Land	₩ 456,856	₩ -	₩ -	₩ -	₩ (1)	₩ 456,855
Buildings	252,639	1,697	-	(9,726)	3,339	247,949
Structures	71,445	598	-	(2,735)	11	69,319
Machinery	23,054	756	(12,855)	(3,747)	168	7,376
Construction equipment	53,896	2,437	(26,331)	(7,584)	1,817	24,235
Vehicles	5,008	2,500	(935)	(1,235)	72	5,410
Tools	6,227	2,104	(468)	(1,904)	(99)	5,860
Equipment	25,192	3,559	(239)	(7,717)	(91)	20,704
Construction-in progress	3,202	1	-	-	137	3,340
	₩ 897,519	₩ 13,652	₩ (40,828)	₩ (34,648)	₩ 5,353	₩ 841,048

	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)

(3) Collateral pledged to financial institutions for borrowings as of December 31, 2018 and 2017 is as follows (Korean won in millions):

		2018			
	Carrying amount	Secured amount	Related account	Related amount	Secured party
Land	₩ 30,277	₩ 52	Deposit	₩ 52	AIG
		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				

15. Intangible assets

(1) Changes in intangible assets for the years ended as of December 31, 2018 and 2017 are as follows (Korean won in millions):

2018									
	Beginning	Acquisition	Disposal	Amortization	Exchange differences	Ending			
Goodwill	₩ 54,988	₩ 1,302	₩ -	₩ -	₩ (4)	₩ 56,286			
Lease rights	218	-	-	(218)	-	-			
Memberships	41,145	-	(586)	-	14	40,573			
Computer software	3,867	2,134	(7)	(1,380)	(109)	4,505			
Concession assets	93,140	17,490	-	(6,149)	(4,299)	100,182			
Technical rights	16,088	-	-	(3,769)	56	12,375			
Others	36	1,895	-	(188)	-	1,743			
	₩ 209,482	₩ 22,821	₩ (593)	₩ (11,704)	₩ (4,343)	₩ 215,664			

2017									
	Beginning	Acquisition	Disposal	Amortization	Exchange differences	Change 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		

15. Intangible assets (cont'd)

(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	₩ 54,677

Goodwill impairment reviews are undertaken annually. The impairment review performed in 2018 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 2018 are as follows:

	Operation profit margin (*1)	Perpetual growth rate (*2)	Post-tax discount rate (*3)
Main assumption	8.8% ~ 10.6%	1.0%	8.0%

(*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, 2018 and 2017 are as follows (Korean won in millions):

	2018	2017
Beginning	₩ 879,889	₩ 498,208
Acquisition	44,852	442,614
Disposal	(939)	(30,763)
Depreciation	(7,209)	(7,236)
Impairment	-	(22,934)
Transfer	(1,475)	-
Exchange differences	710	-
Ending	₩ 915,828	₩ 879,889
Acquisition cost	₩ 957,917	₩ 915,745
Accumulated depreciation	(19,155)	(12,126)
Accumulated impairment losses	(22,934)	(23,730)

Fair values of investment properties approximate their book values as of December 31, 2018 and 2017.

(2) Gain and loss on investment properties recognized in profit or loss for the years ended December 31, 2018 and 2017 are as follows (Korean won in millions):

	2018	2017
Lease income	₩ 7,668	₩ 6,616
Operating expenses	11,428	11,753
	₩ (3,760)	₩ (5,137)

16. Investment properties (cont'd)

(3) Collateral pledged to financial institutions for borrowings as of December 31, 2018 and 2017 are as follows (Korean won in millions):

		2018				
	Carrying amount	Secured amount	Related account	Related amount	Secured party	
Land	₩ 585,130	₩ 313,708	Long-term borrowings and others	₩ 252,723	Woori and others	
Buildings	217,839					
		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					

17. Current and non-current liabilities

(1) Trade and other payables as of December 31, 2018 and 2017 are as follows (Korean won in millions):

	2018	2017
Trade payables	₩ 1,756,861	₩ 2,333,026
Other payables	266,629	140,823
	₩ 2,023,490	₩ 2,473,849

(2) Details of other current liabilities as of December 31, 2018 and 2017 are as follows (Korean won in millions):

	2018	2017
Advance from construction contracts	₩ 254,585	₩ 605,720
Advance from apartment sales	215,654	50,725
Overbilled amounts related to construction	1,931,410	1,814,448
Advance from customers	102,629	82,364
Withholdings	171,451	126,200
Deposits received	1,233	19,361
Accrued expenses	59,358	58,153
Dividends payable	1	1
Unearned revenue	1,518	1,540
Value added tax withheld	15,256	20,218
Membership guarantee deposits	165,009	164,272
Other liabilities	-	31,049
	₩ 2,918,104	₩ 2,974,051

(3) Details of long-term trade and other payables as of December 31, 2018 and 2017 are as follows (Korean won in millions):

	2018	2017
Long-term trade and other payables	₩ -	₩ 8,588

(4) Details of other non-current liabilities as of December 31, 2018 and 2017 are as follows (Korean won in millions):

	2018	2017
Long-term deposits received	₩ 22,627	₩ 24,448
Leasehold deposits received	222,280	244,808
Membership guarantee deposits	44,205	55,804
	₩ 289,112	₩ 325,060

18. Financial liabilities

(1) Details of short-term and long-term financial liabilities as of December 31, 2018 and 2017 are as follows (Korean won in millions):

	2018	2017
Short-term financial liabilities		
Short-term borrowings	₩ 594,992	₩ 1,684,305
Current portion of long-term debts	450,501	1,311,258
Present value discount	(1,015)	(8,532)
Discount on debentures	(63)	(851)
Conversion right adjustments	(51)	(12,968)
Derivative liabilities	73,797	87,943
	<u>₩ 1,118,161</u>	<u>₩ 3,061,155</u>
Long-term financial liabilities		
Long-term borrowings	₩ 958,839	₩ 669,032
Present value discount	-	(2,122)
Debentures	112,986	266,591
Discount on debentures	(804)	(803)
Conversion right adjustments	(12,368)	(657)
Derivative liabilities	1,805	2,472
Others (*)	86,723	83,515
	<u>₩ 1,147,181</u>	<u>₩ 1,018,028</u>

(*) Included the 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.

18. Financial liabilities (cont'd)

(2) Details of short-term borrowings as of December 31, 2018 and 2017 are as follows (Korean won in millions):

Type	Creditor	Maturity	Annual interest rate (%)	2018	2017
Usance	KEB Hana	2019-06-26	0.35~3.24	₩ 38,306	₩ 15,369
	Kookmin	2019-06-19	0.30~3.08	25,613	20,621
	NH	2019-02-27	0.30	5,004	8,674
	Suhyup	2019-06-10	2.83~3.23	4,802	2,457
	Woori	2019-05-08	0.30~3.16	31,983	23,226
	KDB	2019-05-28	2.88~3.39	8,899	20,082
	UOB	2019-02-07	1.00	1,017	-
	Bank of China	2019-04-03	0.92	20,710	-
General borrowings in Korea won	KDB capital and 19 other institutions	-	-	-	686,500
General borrowings in Foreign currency	HSBC	2019-11-24	1M Libor + 2.84	55,905	-
	HSBC	-	-	-	53,570
	Qatar National Bank Consortium	2019-06-30	5.00	9,211	14,713
	UOB	2019-05-22	6M Libor + 1.70	33,782	-
	UOB	2019-05-27	6M Libor + 1.30	13,023	-
	Industrial & Commercial Bank of China	2019-05-10	3M Libor + 2.40	55,905	53,570
	China Everbright Bank	-	-	-	10,714
	China Everbright Bank	2019-07-25	3M Libor + 2.00	22,362	-
	Korea Exim	2019-06-14	3M Libor + 1.73	178,896	-
	Korea Exim	-	-	-	10,209
	Korea Exim	-	-	-	257,136
	Korea Exim	-	-	-	160,710
Subsidiaries	DB Madrid	2019-03-25	12M Libor + 1.50	54,729	-
	KEB Hana and others	2019-12-31	2.92~3.16	34,000	-
	LG Display(Guangzhou) L.L.C	-	-	-	79,148
	SABB	-	-	-	58,921
	Caixa and others (*)	2019-12-17	TR + 8.70	845	208,685
				₩ 594,992	₩ 1,684,305

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

18. Financial liabilities (cont'd)

(3) Details of long-term borrowings as of December 31, 2018 and 2017 are as follows (Korean won in millions):

Type	Creditor	Maturity	Annual interest rate (%)		2018	2017
Long-term borrowings in Korean won	IBK Capital	2021-02-19	3.94~4.65	₩	52,070	₩ 7,280
	Kookmin	2019-11-11	5.60		7,000	7,000
	NongHyup Life Insurance Co., Ltd.	2021-02-19	3.94~4.17		20,000	-
	Double K 3 rd Co., Ltd. (*1)	2019-11-11	5.60		8,000	8,000
	Tongyang Life Insurance Co., Ltd.	2019-07-11	4.65		3,105	10,920
	Dream Arena Co., Ltd. (*1)	2021-02-19	3.90~4.17		75,000	-
	DGB CAPITAL Co., Ltd.	2020-04-03	4.50		10,000	-
	KDB Capital	2020-09-17	3.94~4.50		15,000	-
	Suhyup	2019-07-11	4.92		2,070	7,280
	Aju Capital (*1)	2019-11-11	4.65~5.60		25,518	26,820
	Elysia the 1 st Co., Ltd. (*1)	2020-09-15	4.50~5.00		36,450	56,400
	FN siksa 1 st Co., Ltd. (*1)	2021-06-14	3.64~3.95		18,965	-
	NH Capital Co., Ltd.	2020-04-03	4.50		15,000	-
	Woori	2045-06-12	2.30~2.80		127,435	127,435
	DB Savings Bank Co. Ltd.	2020-04-03	4.50		10,000	-
	Utopia The Eighteenth Co., Ltd.	2020-04-03	4.50		40,000	-
	China Construction Bank (*1)	2019-05-10	4.80		43,000	43,000
	Industrial & Commercial Bank of China	2020-04-20	3.64		20,000	-
	IBK(*1)	2019-10-04	4.80		26,300	60,800
	GRE L.L.C (*1)	2019-10-10	4.70		45,900	132,700
	KB Capital (*1)	2020-04-03	4.50~5.60		22,000	7,000
	KTB Securities	2019-02-20	3.49		100,000	300,000
	Korea Exim	2019-05-29	4.40		25,000	75,000
	SK Securities and other institutions	-	-		-	555,000
Long-term borrowings in foreign currency	Korea Exim	2021-04-12	3M Libor+2.48		13,283	-
	Korea Exim	2019-06-17	6M Eurib+2.20		10,233	10,233
	Korea Exim	2021-01-04	6M Libor+2.43		83,858	-
	Arab Bank, S`pore	2020-01-20	6M Libor+2.40		55,905	53,570
	Mashreq	2019-02-13	3M Libor+2.00		38,015	107,140
Subsidiaries	Qatar National Bank	2019-09-30	5.00		9,211	14,713
	Caixa and others (*2)	2038-11-07	TR + 8.70		362,475	129,273
					1,320,793	1,739,564
Less: current portion					(361,954)	(1,070,532)
					958,839	669,032
Less: discount on long-term borrowings					-	(2,122)
				₩	958,839	₩ 666,910

(*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 of December 31, 2018 and 2017 are as follows (Korean won in millions):

Type	Series	Maturity	Annual interest rate (%)	2018	2017
Bonds in Korean won with fixed interest rate	128-2nd - non-guaranteed debentures	-	3.70	-	60,000
	Convertible bonds (*1)	2021-04-12	2.90	81,085	230,100
Bonds in foreign currency	Convertible bonds (*2)	2021-07-21	4.50	84,081	160,710
Bonds of subsidiaries in foreign currency	Bond (*3)	2021-03-03	CDI + 4.35	6,517	10,127
	Bond (*3)	-	CDI + 3.75	-	11,409
	Bond (*3)	2030-03-01	TR + 9.00	29,851	34,971
				201,534	507,317
Less: current portion				(88,548)	(240,726)
				112,986	266,591
Less: discount on debentures				(804)	(803)
Less: conversion right adjustments				(12,368)	(657)
				<u>₩ 99,814</u>	<u>₩ 265,131</u>

(*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	<ol style="list-style-type: none"> 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)

During the year ended December 31, 2018, the Group issued 5,168,886 shares of its common stock for the exercise of conversion rights to total face value of ₩ 149,014 million.

The convertible bonds has been classified as current liabilities due to the early repayment rights of the bondholders.

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	<ol style="list-style-type: none"> 1. Conversion price: ₩33,409 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)

During the year ended December 31, 2018, 2,591,674 shares of common stock were issued with the total face value of USD 74,800,000 as a result of the exercise of conversion rights.

The convertible bonds have been classified as non-current liabilities due to the expiration of the early repayment right of the bondholders as of December 31, 2018.

(*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, 2018 is ₩1,831 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.

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

	2018	2017
Present value of the defined benefit obligation (*)	₩ 460,767	₩ 421,701
Fair value of plan assets	(387,979)	(366,295)
Defined benefit liability in the consolidated statements of financial position	₩ 72,788	₩ 55,406

(*) The present value of the defined benefit obligation is calculated by deducting contributions to the National Pension Fund of ₩612 million as of December 31, 2018 (2017: ₩645 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, 2018 and 2017 are as follows (Korean won in millions):

	2018	2017
Beginning balance	₩ 421,701	₩ 404,902
Current service cost	55,317	57,968
Interest expenses	10,856	9,236
Remeasurements:	12,772	(10,598)
Actuarial gain and loss arising from changes in demographic assumptions	(565)	(83)
Actuarial gain and loss arising from changes in financial assumptions	12,856	(8,958)
Experience adjustments	481	(1,557)
Exchange differences	(75)	(124)
Payments from plans:	(40,022)	(39,522)
Benefit payments	(40,022)	(39,522)
Liabilities transferred from (to) a related party	(51)	(161)
Changes in consolidation	269	-
Ending balance	₩ 460,767	₩ 421,701

3) Changes in the carrying amount of defined benefit obligation for the years ended December 31, 2018 and 2017 are as follows (Korean won in millions):

	2018	2017
Beginning balance	₩ 366,295	₩ 320,649
Interest income	9,515	7,317
Remeasurements:	(3,928)	(2,810)
Return on plan assets (excluding amounts included in interest income)	(3,928)	(2,810)
Contributions:	49,711	74,050
Employers	49,711	74,050
Payments from plans:	(34,001)	(32,808)
Benefit payments	(33,242)	(32,190)
Service costs	(759)	(618)
Assets transferred to a related party	118	(103)
Changes in consolidation	269	-
Ending balance	₩ 387,979	₩ 366,295

4) The amounts recognized in the consolidated statements of profit or loss for the years ended December 31, 2018 and 2017 are as follows (Korean won in millions):

	2018	2017
Current service cost	₩ 55,317	₩ 57,968
Net interest	2,100	2,538
Ending balance (*)	₩ 57,417	₩ 60,506

(*) Represents total expenses for pension benefits:

	2018	2017
Cost of sales	₩ 32,570	₩ 44,371
Selling and general administrative expenses	24,847	16,135
	₩ 57,417	₩ 60,506

19. Net defined benefit liability (cont'd)

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

5) The principal actuarial assumptions as of December 31, 2018 and 2017 are as follows:

	2018	2017
Discount rate	2.35~3.03%	2.85%
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 of December 31, 2018 is as follows (Korean won in millions):

Assumptions	Sensitivity level (%)	Impact on defined benefit obligation	
		1% increase	1% decrease
Discount rate	1.00	₩ (23,621)	₩ 26,415
Future salary increases	1.00	26,086	(23,792)

20. Provisions

Details of non-current provisions as of December 31, 2018 and 2017 are as follows (Korean won in millions):

	2018	2017
Current provisions (*1)		
Provisions for construction loss (*2)	₩ 86,783	₩ -
Provisions for others	31,688	-
	118,471	-
Non-current provisions		
Provisions for financial guarantee	₩ 232,245	₩ 227,246
Provisions for construction warranty	280,476	203,328
Provisions for others	21,203	10,446
	533,924	441,020
	₩ 652,395	₩ 441,020

(*1) These were included in other current liabilities in the statement of financial position as of December 31, 2017.

(*2) The opening balance has been adjusted for the application of KIFRS 1115 'Revenue from contracts with customers' (Note 35).

21. Commitments and contingencies

(1) As of December 31, 2018, the Group has been provided with guarantees of ₩12,740,712 million (2017: ₩10,442,745 million) from the Construction Guarantee and other business partners in relation to its construction performance, sales of housing lots and construction warranties. As of December 31, 2018, the Group has been provided with guarantees of ₩112,015 million (2017: ₩183,127 million) from the Korea Development Bank and others in relation to letters of credit and ₩3,155,200 million (2017: ₩3,692,527 million) from the Korea Development Bank and others in relation to the performance of its overseas construction projects.

(2) As of December 31, 2018, the Group has provided construction performance guarantees and payment guarantees of ₩34,661 million (2017: ₩33,213 million) in relation to its overseas construction projects and the Group has provided guarantees of ₩9,468,099 million (2017: ₩12,828,136 million) to its business partners.

(3) As of December 31, 2018, in relation to housing loans and temporary relocation costs of future tenants during the construction period, the Group has provided guarantees of ₩2,935,095 million (2017: ₩1,700,410 million) within the limit of ₩5,230,810 million through agreements with financial institutions. Also, in relation to redevelopment projects, the Group has provided payment guarantees of ₩705,015 million (2017: ₩1,025,371 million) within the limit of ₩907,666 million through agreements with reconstruction project cooperatives as of December 31, 2018.

(4) As of December 31, 2018, for the Group's investees incorporated under the Act on Private Investment in Social Overhead Capital, the Group has provided payment guarantees of ₩426,420 million (2017: ₩440,454 million), its portion of total payment guarantee amount of ₩1,988,730 million (2017: ₩1,942,737 million) provided together with its partners, and pledged investments with a carrying value of ₩224,918 million (2017: ₩176,023 million) as collateral as of December 31, 2018. Also, the Group and its partners have provided put options and other commitments of ₩90,144 million (2017: ₩93,557 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 ₩102,400 million (2017: ₩104,854 million) to LNBK Yeongjong Limited and other parties, as of December 31, 2018.

(6) As of December 31, 2018, the Group has provided construction completion commitments of ₩1,290,142 million (2017: ₩1,596,749 million) for construction owners.

(7) As of December 31, 2018, the group has provided 22 checks (22 blank checks), 32 notes amounting to ₩365,485 million (2017: 23 checks (22 blank checks and 1 check amounting to ₩1,898 million) and 27 notes amounting to ₩284,407 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 76 lawsuits with aggregated claims sought by the group amounting to ₩649,450 million (2017: 70 litigations amounting to ₩725,728 million), and 103 lawsuits with aggregated claims against the group amounting to ₩781,621 million (2017: 115 litigations amounting to ₩633,969 million) as the defendant. As of December 31, 2018, 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 of December 31, 2018, 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 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 annually compounded interest of 3.84%.

21. Commitments and contingencies (cont'd)

(10) As of December 31, 2018, the group provided payment guarantees of ₩1,665,700 million (2017: ₩2,119,600 million) within the limit of ₩1,665,700 million (2017: ₩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 ₩1,447,400 million (2017: ₩1,515,900 million) and other PF loans amounting to ₩218,300 million (2017: ₩603,700 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 of December 31, 2018, are as follows (Korean won in millions):

Location	Creditor	Loan balance	Guaranteed amount	Details	Loan period	Type
Gyeonggi province	Securities	₩ 235,000	₩ 235,000	Debt guarantee	2018.10~2019.01	ABCP(ABSTB)
Gyeonggi province	Securities and others	199,500	199,500	Debt guarantee	2018.03~2019.09	ABCP(ABSTB) and other loans
Gyeonggi province	Securities	193,900	193,900	Debt guarantee	2018.09~2019.04	ABCP(ABSTB)
Busan	Securities	161,000	161,000	Debt guarantee	2018.08~2019.08	ABCP(ABSTB)
Gyeonggi province	Securities	110,100	110,100	Debt guarantee	2018.03~2019.03	ABCP(ABSTB)
Gyeonggi province	Securities and others	93,200	93,200	Debt guarantee	2017.07~2020.01	ABCP(ABSTB) and other loans
Daegu	Securities	75,000	75,000	Debt guarantee	2018.12~2019.03	ABCP(ABSTB)
Gyeonggi province	Securities and others	71,400	71,400	Debt guarantee	2016.05~2019.11	ABCP(ABSTB) and other loans
Seoul	Securities	70,000	70,000	Debt guarantee	2018.06~2019.05	ABCP(ABSTB)
Gyeonggi province	Insurance	60,000	60,000	Debt guarantee	2017.08~2020.08	Other loans

(11) As of December 31, 2018, the group has provided payment guarantees to the Korea Securities Finance Corporation by June 2, 2020 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 of December 31, 2018 and 2017 are as follows (Korean won in millions):

	2018	2017
Up to 1 year	₩ 78,592	₩ 78,855
1 to 5 years	314,335	313,934
Over 5 years	441,301	519,595
	₩ 834,228	₩ 912,384

(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 of December 31, 2018, 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 of December 31, 2018 and 2017 are as follows:

	2018	2017
Authorized shares	200,000,000 shares	200,000,000 shares
Par value per share	₩5,000	₩5,000
Outstanding shares	79,435,797 shares	71,675,237 shares
Issued capital	₩397,179 million	₩358,376 million

(2) Details of share premium as of December 31, 2018 and 2017 are as follows (Korean won in millions):

	2018	2017
Gain on disposal of treasury stock	₩ 2,384	₩ 9,752
Additional paid-in capital	767,250	574,545
Gain on business combination	15,002	15,002
Other share premium	27,133	27,857
	₩ 811,769	₩ 627,156

(3) Details of other components of equity as of December 31, 2018 and 2017, are as follows (Korean won in millions):

	2018	2017
Treasury stock (*1)	₩ (36,443)	₩ (75,733)
Other components of equity (*2)	(67,617)	(67,616)
Hybrid securities (*3)(*4)(*5)	27,015	56,141
	₩ (77,045)	₩ (87,208)

(*1) To stabilize the Group's share price, the Group purchased 692,595 shares of own stock and recognized the acquisition in other components of equity as of December 31, 2018.

(*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) This is the amount after deducting the issuing cost.

(*4) 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.

(*5) During the year ended December 31, 2018, hybrid bond of ₩29,127 million was exchanged for 746,686 shares of treasury stock held by the Company. As a result, loss on disposal of treasury stock amounting to ₩10,163 million was charged to share premium.

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

(4) Details of other comprehensive loss as of December 31, 2018 and 2017 are as follows (Korean won in millions):

	2018	2017
Gain on valuation of derivative instruments	₩ 1,169	₩ 8,203
Loss on valuation of derivative instruments	(18,580)	(15,242)
Gain on valuation of available-for-sale financial assets	-	345
Loss on valuation of available-for-sale financial assets	-	(436)
Gain on exchange differences on translations of foreign operations	91,203	94,839
Loss on exchange differences on translations of foreign operations	(145,352)	(154,170)
Share of other comprehensive income of associates	1,095	1,096
	₩ (70,463)	₩ (65,365)

(*) The opening balance has been adjusted for the application of KIFRS 1109 'Financial Instruments' (Note 35).

23. Retained earnings

Retained earnings as of December 31, 2018 and 2017 consist of the following (Korean won in millions):

	2018	2017
Legal reserves	₩ 83,448	₩ 81,138
Appropriated retained earnings for business stabilization	844,653	844,653
Discretionary reserves	1,594,422	2,695,229
Remeasurements of net defined benefit liability	(54,548)	(42,730)
Other consolidated retained earnings	56,718	49,867
Unappropriated accumulated deficit	(37,620)	(1,293,811)
	₩ 2,487,073	₩ 2,334,346

The opening balance has been adjusted for the application of KIFRS 1115 'Revenue from contracts with customers' and KIFRS1109 'Financial Instruments' (Note 35).

24. Earnings (Loss) per share

Basic and diluted earnings (loss) per share of equity holders of the group for the years ended December 31, 2018 and 2017 are as follows (Korean won except for shares):

	2018 (*1)	2017 (*1)
Profit (loss) attributable to equity holders of the parent (*2)	₩ 580,830,662,246	₩ (170,040,631,362)
Diluted effect:		
Profit related to convertible bonds(*3)	3,684,381,579	-
Profit related to hybrid securities(*3)	944,662,719	-
Profit related to foreign currency convertible bonds(*3)	20,017,251,137	-
Diluted net income (loss)	605,476,957,681	(170,040,631,362)
Weighted average number of ordinary shares in issue (*4)	74,577,577	69,944,655
Diluted effect:		
Convertible bonds(*3)	5,385,655	-
Hybrid securities(*3)	1,027,092	-
Foreign currency convertible bonds(*3)	3,863,681	-
	84,854,005	69,944,655
Basic earnings (loss) per share	₩ 7,788	₩ (2,431)
Diluted earnings (loss) per share	7,136	(2,431)

(*1) Although the Group holds convertible bonds and hybrid securities which have a potential dilutive effect as of December 31, 2018, those having anti-dilutive effect are excluded from the calculation of diluted earnings (loss) per share.

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

(*3) The amount is net of the income tax effect.

(*4) The details of calculation of weighted average number of ordinary shares outstanding for the years ended December 31, 2018 and 2017 are as follows (Korean won except for shares):

	2018		2017	
	Number of shares	Number of shares * number of days	Number of shares	Number of shares * number of days
Beginning	71,675,237	26,161,461,505	71,000,000	25,915,000,000
Conversion of convertible bonds	7,760,560	1,434,242,666	675,237	142,454,653
Treasury stock	(692,595)	(374,888,715)	(1,439,281)	(527,655,528)
		27,220,815,456		25,529,799,125
Weighted average number of ordinary shares outstanding		74,577,577		69,944,655

25. Selling and general administrative expenses

Selling and general administrative expenses for the years ended December 31, 2018 and 2017 are as follows (Korean won in millions):

	2018	2017
Salaries	₩ 162,616	₩ 166,552
Pension benefits	24,841	16,135
Employee welfare benefits	28,837	30,873
Taxes and dues	12,328	12,213
Commissions	109,112	96,089
Rents	30,885	32,135
Depreciation	5,668	6,112
Amortization	4,570	4,308
Depreciation of investment properties	302	48
Advertising	21,789	20,026
Bad debt expenses	98,831	28,174
Development	34,353	35,830
Warranty	6,601	16,167
Insurance premium	7,648	6,569
Travel	6,605	6,281
Reversal of financial guarantee liability	(247)	(528)
Others	8,337	7,689
	₩ 563,076	₩ 484,673

26. Other operating income and expenses

(1) Other operating income for the years ended December 31, 2018 and 2017 consists of the following (Korean won in millions):

	2018		2017
Gain on disposal of property, plant and equipment	₩ 1,658	₩	270
Gain on disposal of investment properties	131		52
Gain on disposal of other assets	-		1,200
Gain on foreign currency transactions	56,475		27,249
Gain on foreign currency translation	53,298		28,696
Reversal of allowance for bad debt	24,953		42,686
Gain on valuation of derivatives	6,002		55,494
Gain on derivatives transactions	9,184		112,765
Gain on valuation of firm commitments	59,085		3,017
Dividend income	898		1,561
Gain on disposal of available-for-sale financial assets	-		17
Gain on valuation of financial assets at fair value through profit or loss	9,044		-
Gain on disposal of financial assets at fair value through profit or loss	160		-
Miscellaneous gain	33,445		27,532
Gain on exchange differences on translations of foreign operations	4,786		25
	₩ 259,119	₩	300,564

(2) Other operating expenses for the years ended December 31, 2018 and 2017 consist of the following (Korean won in millions):

	2018		2017
Loss on disposal of property, plant and equipment	₩ 14,086	₩	642
Impairment loss on property, plant and equipment	-		1,724
Loss on disposal of intangible assets	79		16
Loss on disposal of investment property	-		2,238
Impairment loss on investment property	-		22,934
Loss on disposal of other assets	113		46
Loss on foreign currency transactions	61,620		97,114
Loss on foreign currency translation	15,508		192,779
Bad debt expense	54,736		223,381
Loss on valuation of derivatives	3,952		3,221
Loss on derivatives transactions	74,646		19,140
Loss on valuation of firm commitments	12,828		156,104
Loss on disposal of trade receivables	5,162		4,982
Loss on disposal of financial assets	-		149
Loss on valuation of financial assets at fair value through profit or loss	35,776		-
Impairment loss on financial assets	7,448		13,240
Miscellaneous loss and others	15,017		20,066
Loss on exchange differences on translations of foreign operations	17,488		100
	₩ 318,459	₩	757,876

27. Finance income and costs

(1) Finance income for the years ended December 31, 2018 and 2017 consists of the following (Korean won in millions):

	2018		2017
Interest income	₩ 51,060	₩	44,235
Gain on foreign currency transactions	36,910		75,743
Gain on foreign currency translation	17,100		67,925
Gain on valuation of derivatives	-		5,624
Gain on disposal of associates investments	1,374		-
Reversal of financial guarantee liabilities	-		95,289
	₩ 106,444	₩	288,816

(2) Finance costs for the years ended December 31, 2018 and 2017 are as follows (Korean won in millions):

	2018		2017
Interest expenses	₩ 135,042	₩	191,438
Loss on foreign currency transaction	58,798		46,338
Loss on foreign currency translation	28,586		22,157
Loss on disposal of financial assets	-		445
Loss on disposal of financial assets at fair value through profit or loss	1,440		-
Loss on valuation of financial assets at fair value through profit or loss	510		-
Loss on valuation of derivatives	29,520		-
Financial guarantee expenses	29,149		44,449
	₩ 283,045	₩	304,827

28. Income tax

(1) Income tax expense for the years ended December 31, 2018 and 2017 consists of the following (Korean won in millions):

	2018		2017
Current tax on profits for the year	₩ 253,136	₩	93,588
Origination and reversal of temporary differences (*1)	(140,170)		(91,369)
Total income tax expense (benefit)	₩ 112,966	₩	2,219
Deferred income tax charged to equity (*2)	₩ (134,649)	₩	(715)
Income tax expense	247,615		2,934

(*1) Changes in deferred income tax for the years ended December 31, 2018 and 2017 are as follows (Korean won in millions):

	2018		2017
Beginning balance of deferred tax assets	₩ 642,362	₩	550,993
Changes in deferred income tax	140,170		91,369
Ending balance of deferred tax assets	₩ 782,532	₩	642,362

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28. Income tax (cont'd)

(*2) Income tax credited (charged) directly to equity as of December 31, 2018 and 2017 is as follows (Korean won in millions):

	2018			2017		
	Before tax	Tax (charge) credit	After tax	Before tax	Tax (charge) credit	After tax
Gain on valuation of available for-sale securities	₩ -	₩ -	₩ -	₩ -	₩ 6	₩ (6)
Loss on valuation of available for-sale securities	-	-	-	1,111	261	850
Gain on valuation of derivatives	(9,443)	(2,408)	(7,035)	(17,215)	(4,023)	(13,192)
Loss on valuation of derivatives	(4,420)	(1,101)	(3,319)	68,578	16,368	52,210
Gain on exchange differences on translations of foreign operations	1,857	5,533	(3,676)	58,248	5,369	52,879
Loss on exchange differences on translations of foreign operations	11,837	3,018	8,819	(74,310)	(20,673)	(53,637)
Remeasurements of the net defined benefit pension plans	(15,863)	(4,045)	(11,818)	7,980	2,035	5,945
Consideration for conversion rights	(972)	(248)	(724)	(227)	(58)	(169)
Retained earnings (*)	-	(135,398)	135,398	-	-	-
	<u>₩ (17,004)</u>	<u>₩ (134,649)</u>	<u>₩ 117,645</u>	<u>₩ 44,165</u>	<u>₩ (715)</u>	<u>₩ 44,880</u>

(*) The opening balance has been adjusted for the application of KIFRS 1115 'Revenue from contracts with customers' and KIFRS 1109 'Financial Instruments' (Note 35).

(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 of December 31, 2018 and 2017 is as follows (Korean won in millions):

	2018	2017
Profit (loss) before tax	₩ 835,049	₩ (160,742)
Tax calculated at domestic tax rates applicable to profits in the respective countries	212,937	(40,989)
Tax effects of:		
Income not subject to tax	-	(776)
Expenses not deductible for tax purposes	5,946	8,598
Foreign income tax expense	8,381	6,046
No-recognition of deferred tax	18,127	40,276
Additional income taxes for prior periods and others	2,224	(10,221)
	<u>34,678</u>	<u>43,923</u>
Income tax expense	<u>₩ 247,615</u>	<u>₩ 2,934</u>

29. Expenses classified by nature

Expenses classified by nature for the years ended December 31, 2018 and 2017 are as follows (Korean won in millions):

	2018	2017
Labor cost	₩ 1,154,641	₩ 1,025,524
Materials	3,053,262	3,009,367
Outsourcing	5,549,169	4,894,787
Employee welfare benefits	128,022	136,618
Bad debt expense	98,831	28,350
Rents	184,545	191,783
Depreciation and amortization	46,352	49,880
Taxes and dues	177,593	145,341
Service fees	837,617	940,491
Others	1,228,439	711,358
Changes in inventories	(383,587)	227,288
	₩ 12,074,884	₩ 11,360,787

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

30. Related party transactions

(1) Related parties as of December 31, 2018 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., ParticipesBiorreciclaje de Cadiz, S.A., Gestion de Participes de Bioreciclaje, Shariket Miyeh Ras Djinet, Spa, Shariket Tahlya Miyah Mostaganem, Spa, Sejong Industry Complex Corp., Hakun 7 Industry, Complex Co., Ltd., Beopwon Industry Urban Development Corp., HyangSan 2 Urban Development Corp., Tongjin Industry Complex CO., Ltd (*2), PT. Daria Mulia Properti(*2), SoBaek Co., Ltd. (*2), Gwancheon Sangsang PFV (*2), Yeouido MBC Site MXD PFV. Inc (*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., 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., GSNetworks Co., Ltd (*3), GUMIMAKEUNMUL (*3)

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

(*2) Newly acquired in 2018.

(*3) Newly included in 2018

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30. Related party transactions (cont'd)

(2) Significant transactions with related parties for the years ended December 31, 2018 and 2017 are as follows (Korean won in millions):

		2018												
		Sales, others						Purchase, others						Changes in ownership
Related party		Sales		Other income		Total	Purchase		Other expenses		Total			
Associates	GS KOCREF													
	New Stay REIT Co., Ltd.	₩	38,072	₩	-	₩	38,072	₩	-	₩	-	₩	-	
	Major Development Co., Ltd.		23		-		23		-		-		-	
	FGS East Asia Technical Resource Management, Inc.		-		81		81		1,318		18		1,336	
	SoBaek Co., Ltd. (*1)		-		267		267		-		-		90	
	Tongjin Industry Complex CO., Ltd (*2)		-		-		-		-		-		10	
	Hakun 7 Industry Complex Co.,Ltd.		-		-		-		-		-		190	
	Yeouido MBC Site MXD PFV. Inc (*1)		232		-		232		-		-		6,500	
	Gwancheon Sangsang PFV (*1)		-		-		-		-		-		2,030	
	Joint venture Others	G&M Estate Co., Ltd.		310		-		310		811		-		811
		Samyang INT'L Co., Ltd.		-		-		-		17,547		9		17,556
		Seungsan Group Corporation		-		-		-		-		11		11
		GS Holdings		218		-		218		-		23,487		23,487
		GS Global Corp.		13		-		13		16,916		-		16,916
GS Donghae Electric Power Co., Ltd.			12,733		-		12,733		40		-		40	
GS Retail Co., Ltd.			521		-		521		345		94		439	
GS Sports Ltd.			528		-		528		21		4,751		4,772	
GS ITM			-		-		-		2,083		278		2,361	
GS ENTEC Corp.			-		-		-		29,179		-		29,179	
GS E&R Corp.			2,568		-		2,568		-		-		-	
GS Teleservice			-		-		-		-		20		20	
GS Pocheon Green Energy Corp.			68,455		-		68,455		15		-		15	
GS Home Shopping Inc.			664		-		664		-		-		-	
Boryeong LNG Terminal Co., Ltd			35,648		-		35,648		59		546		605	
Pusan New Road Co., Ltd.			6,080		-		6,080		-		-		-	
Seoul Munsan Highway Corporation(*2)			50,687		-		50,687		5		-		5	
Oksan Ochang Highway Corporation			8,485		-		8,485		-		-		-	
Eun Pyeong New Road Corp.			-		11		11		-		-		-	
GS Neotek		268		-		268		15,474		31		15,505		
GS Energy Corporation		1,898		-		1,898		142		-		142		
GS Mbiz Co., Ltd.		-		-		-		1,574		-		1,574		
GS EPS Co., Ltd.		36,259		-		36,259		8		-		8		
GS-Caltex Corporation		76,945		-		76,945		19		-		19		

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30. Related party transactions (cont'd)

		2018						
		Sales, others			Purchase, others			Changes in ownership
Related party		Sales	Other income	Total	Purchase	Other expenses	Total	
Others	GS Power Co., Ltd.	84,600	-	84,600	429	-	429	-
	GS Park 24 Co., Ltd.	1,053	-	1,053	3	3	6	-
	Parnas Hotel Co., Ltd.	4,734	-	4,734	69	43	112	-
	Gunsan Green Energy Center Co., Ltd.(*2)	3,333	-	3,333	-	-	-	-
	GUMI MAKEUNMUL(*3)	-	-	-	-	-	-	584
	NC TAS(*2)	36	-	36	357	145	502	-
	PNS Co., Ltd.	-	-	-	7	-	7	-
	GS Netvision	-	-	-	8	-	8	-
		₩ 434,363	₩ 359	₩ 434,722	₩ 86,429	₩ 29,436	₩ 115,865	₩ 11,259

(*1) Newly acquired in 2018.

(*2) Excluded from related parties in 2018.

(*3) Newly included in 2018.

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30. Related party transactions (cont'd)

Associates		2017												
		Sales, others						Purchase, others						Changes in ownership
		Sales		Other income		Total	Purchase		Other expenses		Total			
Associates	Related party													
	GS KOCREF													
	New Stay													
	REIT CO., Ltd.	₩	112,006	₩	-	₩	112,006	₩	-	₩	-	₩	-	
	Major Development													
	Co., Ltd.		101		-		101		-		-		-	
	FGS East Asia													
	Technical Resource													
	Management,													
	Inc.		164		62		226		76		153		229	
	Sejong Industry													
	Complex Corp. (*1)		-		-		-		-		-		-	
	Hakun 7 Industry													
	Complex Co.,Ltd													
	(*1)		-		-		-		-		-		-	
	HyangSan 2 Urban													
	Development Corp.													
	(*1)		-		-		-		-		-		-	
	Beopwon Industry													
	Urban Development													
	Corp (*1)		-		-		-		-		-		-	
Joint	G&M Estate Co., Ltd.		306		-		306		1,379		-		1,379	
venture	Samyang INT'L													
Others	Co., LTD.		-		-		-		15,230		-		15,230	
	Seungsan Group													
	Corporation		-		-		-		-		17		17	
	GS Holdings		197		-		197		-		21,635		21,635	
	GS Global Corp.		12		-		12		23,047		-		23,047	
	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		-		-		-	
	Boryeong LNG													
	Terminal Co., Ltd.		49,839		-		49,839		-		-		-	
	Pusan New road													
	Co., Ltd.		80		-		80		-		-		-	
	Seoul Munsan													
	Highway													
	Corporation		39,015		-		39,015		5		-		5	
	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	
	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	

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30. Related party transactions (cont'd)

		2017						
		Sales, others			Purchase, others			Changes in ownership
Related party		Sales	Other income	Total	Purchase	Other expenses	Total	
Others	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
	Gyongbuk Green Energy (*2)	(1,373)	-	(1,373)	-	-	-	-
	GS Netvision	-	-	-	24	-	24	-
	Gumi green water Co., Ltd. (*2).	9,098	-	9,098	-	-	-	-
		₩ 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)

(3) Receivables and payables arising from related party transactions

1) Receivables and payables arising from related party transactions as of December 31, 2018 and 2017 are as follows (Korean won in millions):

		2018						
		Receivables				Payables		
	Related party	Trade receivables	Other receivables	Loans	Total	Trade payables	Other payables	Total
Associates	GS KOCREF New Stay REIT CO., Ltd.	₩ 25	₩ -	₩ -	₩ 25	₩ -	₩ 1,299	₩ 1,299
	Major Development Co., Ltd.	4,069	-	-	4,069	-	6	6
	FGS East Asia Technical Resource Management, Inc.	-	158	1,006	1,164	-	-	-
	SoBaek Co., Ltd.	-	-	6,856	6,856	-	-	-
	HyangSan 2 Urban Development Corp	-	-	-	-	-	5	5
	Cadiz San Fernando, A.I.E.	270	-	-	270	200	-	200
	Gestion de Participes De Biorreciclaje	77	-	-	77	-	-	-
	Participes de Biorreciclaje S.A	896	-	-	896	-	-	-
	Shariket Miyeh Ras Djinet, Spa	811	-	-	811	706	-	706
	Shariket Tahlya Miyah Mostaganem Spa	2,324	-	-	2,324	-	-	-
	G&M Estate Co., Ltd.	-	64	-	64	-	68	68
	Others	-	-	-	-	4,816	147	4,963
	Seungsan Group Corporation	-	3,149	-	3,149	-	311	311
	GS Holdings	-	10	-	10	-	2,825	2,825
	GS Global Corp.	-	41	-	41	1,503	1,482	2,985
Joint venture	GS Donghae Electric Power Co., Ltd.	7,385	27	-	7,412	-	-	-
	GS Retail Co., Ltd.	-	23	-	23	-	7,709	7,709
	GS SPORTS Ltd.	41	-	-	41	-	144	144
	GS ITM	-	91	-	91	304	75	379
	GS ENTEC Corp.	-	-	-	-	538	-	538
	GS E&R Corp.	230	-	-	230	-	708	708
	GS Teleservice	-	-	-	-	-	347	347
	GS Pocheon Green Energy Corp.	26,946	-	-	26,946	-	6,889	6,889
	GS Home Shopping Inc.	74	-	-	74	-	1,511	1,511
	Boryeong LNG Terminal Co., Ltd.	978	-	-	978	-	32,065	32,065
	Pusan New road Co., Ltd.	4,382	-	-	4,382	-	-	-
	Oksan Ochang Highway Corporation	3,686	391	-	4,077	-	65	65
	Eun Pyeong New Road Corp.	1,947	61	163	2,171	-	-	-
	GS Neotek	11	-	-	11	1,915	1,622	3,537
	GS Energy Corporation	-	95	-	95	-	4,536	4,536
Others	GS Mbiz Co., Ltd.	-	-	-	-	569	-	569
	GS EPS Co., Ltd.	-	-	-	-	-	28,959	28,959
	GS-Caltex Corporation	9,418	5	-	9,423	-	6,891	6,891
	GS Power Co., Ltd.	2,376	-	-	2,376	49	20,161	20,210
	GS Park 24 Co., Ltd.	-	107	-	107	-	-	-
	Parnas Hotel Co., Ltd.	611	-	90	701	16	1,600	1,616
	Kyung Won Construction Co., Ltd.	-	-	-	-	-	114	114
	PNS Co., Ltd.	-	-	-	-	2	-	2
		₩ 66,557	₩ 4,222	₩ 8,115	₩ 78,894	₩ 10,618	₩ 119,539	₩ 130,157

GS Engineering & Construction Corporation and its subsidiaries
Notes to the consolidated financial statements
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30. Related party transactions (cont'd)

		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	
	Gestion de Participes de Biorreciclaje	77	-	-	77	-	-	-	
	Participes de Biorreciclaje S.A	884	-	-	884	-	-	-	
	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	
Joint venture	Seungsan Group Corporation	-	3,149	-	3,149	-	314	314	
	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	
Others	GS Pocheon Green Energy Corp.	26,991	-	-	26,991	-	21,336	21,336	
	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	
Others	GS EPS Co., Ltd.	-	-	-	-	-	2,839	2,839	
	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	

2) As a result of the collective assessment allowance for doubtful accounts for the related party receivables amounted to ₩ 517 million as of December 31, 2018.

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30. Related party transactions (cont'd)

(4) Changes in loans to related parties for the years ended December 31, 2018, and 2017 are as follows (Korean won in millions):

			2018													
	Annual interest rate (%)	Maturity date	Beginning		Increase		Effects of changes in foreign exchange rates		Transfer		Ending		Interest income		Equity transaction	
FGS East Asia																
Technical Resource Management, Inc.	4.60	2019.01.17~2020.07.13	₩	1,714	₩	983	₩	1,804	₩	113	₩	1,006	₩	81	₩	-
SoBaek Co., Ltd. (*1)	6.00	-		-		6,856		-		-		6,856		-		90
Tongjin Industry Complex CO., Ltd(*1)	-	-		-		-		-		-		-		-		10
Hakun 7 Industry Complex Co.,Ltd	-	-		-		-		-		-		-		-		190
Yeouido																
MBC Site																
MXD PFV. Inc (*1)	-	-		-		-		-		-		-		-		6,500
Gwancheon Sangsang PFV (*1)	-	-		-		-		-		-		-		-		2,030
Pusan New Road Co., Ltd.	-	-		-		-		-		-		-		-		1,855
Eun Pyeong New Road Corp.	6.90	-		163		-		-		-		163		11		-
GUMIMAKEUNMUL (*2)	-	-		-		-		-		-		-		-		584
			₩	1,877	₩	7,839	₩	1,804	₩	113	₩	8,025	₩	92	₩	11,259

(*1) Newly acquired in 2018.

(*2) Newly included in 2018.

	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. (*1)	-	-	-	-	-	-	-	10					
Hakun 7 Industry Complex Co.,Ltd (*1)	-	-	-	-	-	-	-	10					
Beopwon Industry Urban Development Corp. (*1)	-	-	-	-	-	-	-	100					
HyangSan 2 Urban Development Corp. (*1)	-	-	-	-	-	-	-	5					
Eun Pyeong New Road Corp.	6.90	-	163	-	-	163	11	-					
Pusan New Road Co., Ltd.	-	-	-	-	-	-	-	2,150					
Seoul Munsan HighwayCorporation	-	-	-	-	-	-	-	26,047					
Gunsan Green Energy Center Co., Ltd. (*2)	-	-	-	-	-	-	-	1,235					
			₩ 1,251	₩ 812	₩ (186)	₩ 1,877	₩ 73	₩ 29,557					

(*1) Newly acquired in 2017.

(*2) Excluded from related parties in 2017.

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30. Related party transactions (cont'd)

(5) Details of payment guarantees the Group provides to the related parties as of December 31, 2018 and 2017 are as follows (Korean won in millions):

	Type	Beneficiary	Period	2018	2017
Associates Major					
Development Co., Ltd.	Payment guarantee	Kyobo Securities Co., Ltd.	2018.06~2019.05	₩ 70,000	₩ 70,000
GS KOCREF					
New Stay REIT Co., Ltd.	Payment guarantee	Samsung Life Insurance Co., Ltd.	-	-	193,900
SoBaek Co., Ltd.	Payment guarantee	Kyobo Securities Co., Ltd.	2018.08~2019.05	80,600	-
	Payment guarantee	Korea asset Securities Co., Ltd.	2018.08~2019.08	80,400	-
Seoul Munsan Highway Corporation	Payment guarantee	Hanwha General Insurance and others	2018.02~2026.01	22,750	-
Others					
Oksan Ochang Highway Corporation	Payment guarantee	Meritz Fire & Marine Insurance CO., Ltd and others	2015.10~2036.07	6,000	6,000

(6) Compensation for key management personnel of the Group as of December 31, 2018 and 2017 consists of the following (Korean won in millions):

	2018	2017
Salaries	₩ 27,834	₩ 26,024
Pension benefits	4,295	4,267
	₩ 32,129	₩ 30,291

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December 31, 2018 and 2017

31. Cash flows

(1) Cash flows from operating activities for the years ended December 31, 2018 and 2017 are as follows (Korean won in millions):

	2018	2017
Loss for the year	₩ 587,434	₩ (163,676)
Adjustments for:		
Income tax expense	247,615	2,934
Interest expenses	135,042	191,438
Interest income	(51,060)	(44,235)
Dividend income	(898)	(1,561)
Depreciation	34,648	39,771
Amortization	11,704	10,109
Depreciation of investment properties	7,209	7,236
Bad debt expenses	179,984	275,468
Reversal of bad debt expense	(51,370)	(66,599)
Provision for severance benefits	59,248	61,462
Loss on disposal of trade receivables	5,162	4,982
Gain or loss on foreign currency translation, net	(26,304)	118,314
Gain or loss on disposal of property, plant and equipment, net	12,428	372
Impairment loss on property, plant and equipment, net	-	1,724
Gain or loss on disposal of intangible assets, net	79	16
Gain or loss on disposal of investment properties, net	(131)	2,186
Impairment loss on investment properties	-	22,934
Gain or loss on valuation of derivatives, net	27,470	(57,897)
Gain or loss on derivatives transactions, net	65,463	(93,625)
Gain or loss on valuation of firm commitments, net	(46,257)	153,087
Financial guarantee expenses	29,149	44,449
Reversal of provision for financial guarantee	(247)	(95,818)
Construction warranty expenses	117,386	94,200
Reversal of provision for construction warranties	(1,223)	(1,951)
Gain or loss on disposal of other assets	113	(1,154)
Gain or loss on valuation of financial assets at fair value through profit or loss	27,242	-
Gain or loss on disposal of financial assets at fair value through profit or loss	1,280	-
Gain or loss on disposal of financial assets, net	-	577
Impairment loss on financial assets	7,448	13,240
Loss on overseas operations translation	17,488	100
Gain on overseas operations translation	(4,786)	(25)
Gain or loss on disposal of investments in associates	(1,374)	-
Valuation gain or loss on investments in associates	(6,501)	6,088
Others	2,629	(2,795)
	798,636	685,027
Changes in operating assets and liabilities		
Trade and other receivables	186,190	(614,565)
Inventories	139,834	29,908
Settlement of derivatives transactions	(20,631)	58,559
Other current assets	20,302	(67,322)
Other non-current assets	(2,770)	(5,968)
Trade and other payables	(474,928)	157,550
Other current liabilities	100,465	54,260
Current provision	27,933	(23,483)
Non-current provision	(26,325)	(51,154)
Other non-current liabilities	(883)	(103)
Payment of severance benefits	(60,901)	(82,309)
Overseas operations translation	8,163	(27,995)
	(103,551)	(572,622)
Cash flows from (used in) operations	₩ 1,282,519	₩ (51,271)

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December 31, 2018 and 2017

31. Cash flows (cont'd)

(2) Details of significant non-cash transactions for the years ended December 31, 2018 and 2017 are as follows (Korean won in millions):

	2018	2017
Reclassification of borrowings	₩ 323,002	₩ 1,051,614
Conversion of convertible bonds	231,823	19,717
Reclassification of bonds payable	127,854	240,368
Reclassification loans	78,456	6,970
Non-cash acquisition of inventories	49,330	-
Write off of trade receivables and long-term loans	47,817	14,201
Exchange of hybrid securities	29,127	-
Reclassification of business security deposit	21,475	1,816
Reclassification of membership guarantee deposits	12,323	5,225
Non-cash acquisition of investment properties	-	381,404
Reclassification of advance payments to inventories	-	198,625
Reclassification of construction-in-progress to property, plant and equipment	-	37,072
Reclassification of payables	-	25,299
Evaluation of convertible bond	-	13,053

(3) Details of changes in liabilities arising from financing activities for the year ended December 31, 2018 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	₩	1,684,305	₩	(911,828)	₩	-	₩	(190,221)	₩	-	₩	12,736	₩	594,992
Current portion of Debentures		226,907		(72,742)		(15,459)		127,854		(182,298)		4,172		88,434
Current portion of long-term borrowing		1,062,000		(1,029,024)		2,051		323,002		6,255		(3,345)		360,939
Other current liabilities		164,272		(11,586)		-		12,323		-		-		165,009
Debentures		265,131		(7,698)		2,584		(127,854)		(32,190)		(159)		99,814
Long-term borrowings		666,910		420,386		257		(132,781)		1,078		2,989		958,839
Other non-current liabilities		325,060		(23,662)		-		(12,323)		-		37		289,112
	₩	4,394,585	₩	(1,636,154)	₩	(10,567)	₩	-	₩	(207,155)	₩	16,430	₩	2,557,139

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 of December 31, 2018 and 2017 are as follows (Korean won in millions / foreign currencies in thousands):

	2018			
	Financial assets		Financial liabilities	
	Foreign currency	Korean won equivalent	Foreign currency	Korean won equivalent
USD	921,086	1,029,866	1,095,105	1,224,437
EUR	157,213	201,102	87,917	112,460
KWD	1,575	5,805	139	511
JPY	-	-	3,304,168	33,477
SGD	-	-	1	-

	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

As of December 31, 2018 and 2017, 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):

	2018		2017	
	5% increase	5% decrease	5% increase	5% decrease
USD	₩ (9,729)	₩ 9,729	₩ (14,270)	₩ 14,270
EUR	4,432	(4,432)	4,347	(4,347)
KWD	265	(265)	1,848	(1,848)
JPY	(1,674)	1,674	(444)	444
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 of December 31, 2018, the financial liabilities that are exposed to interest rate risk are the variable-rate borrowings issued at variable rates amounting to ₩873,663 million (2017: ₩1,112,368 million).

As of December 31, 2018 and 2017, 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):

	2018		2017	
	100bp increase	100bp decrease	100bp increase	100bp decrease
Interest expenses	₩ 5,881	₩ (5,881)	₩ 4,565	₩ (4,565)

(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. The Group appropriately evaluates and reflects the risks to the consolidated statement of financial position when a default is expected, as of December 31, 2018, for receivables with any signs of impairment or those for which recovery date has passed.

The allowance for doubtful accounts by the collective assessment for the trade receivable as of December 31, 2018, is as follows (Korean won in millions):

Past due period	Expected credit losses ratio (%)	Book value	Expected credit losses
Receivable not past due	0.56	₩ 241,477	₩ 1,358
Less than 3 months	1.02	252,370	2,568
Between 4 ~ 12 months	2.57 ~ 8.42	154,050	4,237
Between 13 ~ 24 months	9.21 ~ 13.49	6,987	769
Between 25 ~ 36 months	15.89 ~ 39.80	868	174
Over 36 months	49.01	10,119	4,959
		₩ 665,871	₩ 14,065

Details of maximum exposure to credit risk as of December 31, 2018 and 2017 are as follows (Korean won in millions):

	2018	2017
Cash equivalents (excluding cash on hands)	₩ 1,587,442	₩ 2,435,918
Trade and other receivables	4,297,385	4,763,280
Short-term financial assets	295,205	295,943
Long-term financial assets (*1)	194,151	203,771
Long-term trade and other receivables	946,330	963,196
Non-current provisions (*2)	4,707,050	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 of December 31, 2018 and 2017 are as follows (Korean won in millions):

	Financial institutions	2018		2017	
		Limited amount	Used amount	Limited amount	Used amount
Short-term and long-term financial liability (*)	Korea Eximbank and others	₩ 3,715,434	₩ 2,236,954	₩ 5,384,915	₩ 4,017,805

(*) 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):

	2018					
	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	₩ 2,023,490	₩ 2,023,490	₩ 2,020,490	₩ -	₩ -	₩ -
Long-term trade and other payables	-	-	-	-	-	-
Short-term and long-term financial liability (*1)	2,236,954	2,327,386	1,436,221	343,777	275,212	272,176
Non-current provisions (*2)	232,245	4,707,050	2,368,145	1,268,508	818,465	251,932
	₩ 4,492,689	₩ 9,057,926	₩ 5,827,856	₩ 1,612,285	₩ 1,093,677	₩ 524,108

(*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)

	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.

(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 of December 31, 2018 and 2017 are as follows (Korean won in millions):

	2018	2017
Total liabilities (A)	₩ 8,408,589	₩ 10,456,899
Total equity (B)	3,624,686	3,239,715
Deposits (C)	1,587,442	2,435,918
Borrowings (D)	2,103,017	3,905,253
Debt-to-equity ratio (A/B)	232%	323%
Net borrowings ratio ((D-C)/B)	14%	45%

33. Fair value

For the year ended December 31, 2018, 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 of December 31, 2018 and 2017 are as follows (Korean won in millions):

	2018		2017	
	Book value	Fair value	Book value	Fair value
Financial assets				
Cash and cash equivalents	₩ 1,592,619	₩ 1,592,619	₩ 2,442,298	₩ 2,442,298
Trade and other receivables (*1)	2,570,079	2,570,079	3,242,344	3,242,344
Short-term financial assets	295,205	295,205	295,943	295,943
Long-term trade and other receivables	946,330	946,330	963,196	963,196
Long-term financial assets	194,151	194,151	449,892	449,892
Financial assets at fair value through profit or loss	230,208	230,208	-	-
	₩ 5,828,592	₩ 5,828,592	₩ 7,393,673	₩ 7,393,673
Financial liabilities				
Trade and other payables	₩ 2,023,490	₩ 2,023,490	₩ 2,473,849	₩ 2,473,849
Short-term financial liabilities	1,118,162	1,118,162	3,061,155	3,061,155
Other current liabilities (*2)	224,368	224,368	222,425	222,425
Long-term trade and other payables	-	-	8,588	8,588
Long-term financial liabilities	1,147,180	1,147,180	1,018,028	1,018,028
Other non-current liabilities (*3)	266,485	266,485	300,613	300,613
Non-current provisions (*4)	232,245	232,245	227,246	227,246
	₩ 5,011,930	₩ 5,011,930	₩ 7,311,904	₩ 7,311,904

(*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 consolidated 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

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 of December 31, 2018 and 2017.
- 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 of December 31, 2018 and 2017 are as follows (Korean won in millions):

2018	Level 1	Level 2	Level 3	Total
Financial assets				
Derivatives assets	₩	- ₩	53,752 ₩	- ₩
Financial assets at fair value through profit or loss		-	230,208	230,208
Financial liabilities				
Derivatives liabilities	₩	- ₩	75,602 ₩	₩
Debentures and borrowings		-	2,103,016	-
				2,103,016
2017	Level 1	Level 2	Level 3	Total
Financial assets				
Derivatives assets	₩	- ₩	96,466 ₩	- ₩
Financial liabilities				
Derivatives liabilities	₩	- ₩	90,415 ₩	- ₩
Debentures and borrowings		-	3,905,253	-
				3,905,253

Details of valuation methods and input variables of financial instruments classified as level 2 of the fair value hierarchy as of December 31, 2018 and 2017 are as follows (Korean won in millions):

	2018	2017	Valuation methods	Total
Derivative assets	₩ 53,752	₩ 96,466		
Derivative liabilities	75,602	90,415	DCF and	CDI and others
Debentures and borrowings	2,103,016	3,905,253	others	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, 2018.

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	₩ 59,734	Financial assets
Araucaria Saneamento, S.A. (Campos do Jordao)	Sewage purifying plant , DBL	Brazil	April 2010	April 2033	31,595	Financial assets
Saneamento do Vale do Pariba, S.A.	Sewage purifying plant , DBL	Brazil	March 2011	June 2034	22,096	Financial assets
Servicos de Saneamento de Mogi Mirim, S.A.	Sewage purifying plant , DBOOT	Brazil	May 2008	September 2038	19,860	Financial assets
Sociedad de Economia Mixta Aguas de Soria, S.L.	Water supply and drainage combine management TOT	Spain	January 2014	December 2038	13,434	Intangible assets

35. Changes in accounting policies

35.1 KIFRS 1109 Financial Instruments

The Group has applied KIFRS 1109, Financial Instruments, for the first time for the annual reporting period commencing January 1, 2018. In accordance with the transitional provisions in KIFRS 1109, comparative information has not been restated. The application of KIFRS 1109 has the following impacts on the consolidated financial statements.

35.1.1 Details of changes in the opening balance of retained earnings.

The changes in the opening balance of retained earnings due to the classification and measurement of financial instruments of the group are as follows (Korean won in millions):

Details of adjustment	Amount
Balance as of January 1 - KIFRS 1039	₩ 2,334,346
Adjustment of total surplus due to adoption of KIFRS 1109	
From available-for-sale financial assets to financial assets at fair value through profit or loss	(122)
Increase in allowance for doubtful accounts of trade receivables (Notes 7 and 23)	(24,499)
Increase in valuation allowance of debt instruments measured at amortized cost (Notes 7 and 23)	(69,890)
Increase in deferred tax for loss allowance (Notes 23 and 28)	24,070
	(70,441)
Balance as of January 1 – KIFRS 1109	₩ 2,263,905

35.1.2 Reclassifications of financial Instruments

The group evaluated the business models applicable to financial assets on the date of initial application of KIFRS 1109 and classify financial assets under adoption of KIFRS 1109.

(1) On the date of initial application, January 1, 2018, the financial instruments of the group subject to reclassifications were as follows (Korean won in millions):

	Financial assets at fair value through profit or loss	Fair value through other comprehensive income (*1)	Financial Assets at amortized cost (*2)	Total
Balance as of January 1 - KIFRS 1039	₩ -	₩ 251,727	₩ 7,045,479	₩ 7,297,206
Classifications of financial Instruments	251,727	(251,727)	-	-
Balance as of January 1 – KIFRS 1109	251,727	-	7,045,479	7,297,206

(*1) Prior period: available-for-sale financial assets

(*2) Prior period: loans and receivables

(2) On the date of initial application, January 1, 2018, the financial instruments of the group subject to reclassifications were as follows (Korean won in millions):

	Category		Carrying amount	
	KIFRS 1039	KIFRS 1109	KIFRS 1039	KIFRS 1109
Current assets				
Cash and cash equivalents	Amortized cost	Amortized cost	₩ 2,442,298	₩ 2,442,298
Trade and other receivables (*)	Amortized cost	Amortized cost	3,242,344	3,242,344
Short-term financial instruments	Amortized cost	Amortized cost	260,805	260,805
Non-current assets				
Long-term Trade and other receivables	Amortized cost	Amortized cost	963,196	963,196
Available-for-sale financial assets	Fair value	-	251,727	-
Financial assets at fair value through profit or loss	-	Fair value through profit or loss	-	251,727
Long-term financial instruments	Amortized cost	Amortized cost	198,165	198,165

(*) Unbilled construction is excluded.

35. Changes in accounting policies (cont'd)

35.1 KIFRS 1109 Financial Instruments (cont'd)

35.1.2 Reclassifications of financial Instruments (cont'd)

(3) The impact of the reclassification of financial instruments on the group's equity as of January 1, 2018, is as follows (Korean won in millions):

	Balance of accumulated other comprehensive income	Balance of Retained earning	Total
Balance as of January 1 - KIFRS 1039	₩ (91)	₩ 2,334,346	₩ 2,334,255
Classifications of financial Instruments	91	(122)	(31)
Balance as of January 1 – KIFRS 1109	-	2,334,224	2,334,224

(4) Classifications from available-for-sale financial assets to financial assets at fair value through profit or loss

Available-for-sale financial assets of the Group amounting to ₩ 251,727 million are classified as at financial assets at fair value through profit or loss. These financial assets do not qualify as financial assets measured at amortized cost because the contractual cash flows do not represent only principal and interest. The valuation gain or loss on available-for-sale financial assets of ₩ 91 million and deferred income tax assets amounting to ₩ 31 million previously presented under accumulated OCI, was reclassified to retained earnings as of January 1, 2018. Fair value gains related to these financial assets amounting to ₩ 9,044 million and loss of ₩ 36,286 million were recognized.

(5) Other financial instruments

Held-for-sale equity instruments and contingent consideration are to be classified as financial assets at fair value through profit or loss under KIFRS 1109. As a result of the adoption of KIFRS 1109, there is no impact on the consolidated financial statements.

35.1.3 Impairments of Financial Assets

The Group has applied the new expected credit loss model of KIFRS 1109 to three types. The expected credit loss model applied to each type of financial asset and financial asset is as follows:

(1) Trade receivables

For the purpose of measuring the expected credit losses of trade receivables under KIFRS 1109, the Group entity applies the practical expedient and uses the expected credit loss model for the life-time for trade receivables subject to the expected credit loss model.

(2) Debt instruments other than trade receivables

For credit exposures for which there has not been a significant increase in credit risk since initial recognition, expected credit losses are provided for credit losses that result from default events that are possible within the next 12-months (a 12-month expected credit loss). For those credit exposures for which there has been a significant increase in credit risk since initial recognition, a loss allowance is required for credit losses expected over the remaining life of the exposure, irrespective of the timing of the default (a lifetime expected credit loss).

35.1.4 Hedge Accounting

The consolidated financial statements have been prepared by applying the requirements of KIFRS 1039 in accordance with the transition provisions.

35.2 Revenue from contracts with customers

The group has applied KIFRS 1115, Revenue from Contracts with Customers, for the first time for their annual reporting period commencing January 1, 2018. In accordance with the transitional provisions in KIFRS 1115, comparative figures have not been restated. The application of KIFRS 1115 has the following impact on the consolidated financial statements.

GS Engineering & Construction Corporation and its subsidiaries
Notes to the consolidated financial statements
December 31, 2018 and 2017

35. Changes in accounting policies (cont'd)

35.2 Revenue from contracts with customers (cont'd)

35.2.1 Statements of financial position (Korean won in millions)

	<u>Adjustment</u>	<u>Before adjustment</u>	<u>Adjustment amount</u>	<u>After adjustment</u>
Assets				
Current assets				
Cash and cash equivalents		₩ 2,442,298	₩ -	₩ 2,442,298
Trade and other receivables, net	(*1)(*2)(*3)	4,763,280	(221,097)	4,542,183
Inventories	(*1)	1,090,698	20,216	1,110,914
Short-term financial assets		295,943	-	295,943
Other current assets	(*3)	990,122	(330,920)	659,202
Total current assets		<u>9,582,341</u>	<u>(531,801)</u>	<u>9,050,540</u>
Non-current assets				
Property, plant and equipment, net		897,519	-	897,519
Intangible assets, net		209,482	-	209,482
Investment properties		879,889	-	879,889
Investments in associates		44,389	-	44,389
Long-term trade and other receivables, net		963,196	-	963,196
Long-term financial assets		449,892	-	449,892
Deferred tax assets	(*4)	669,907	111,360	781,267
Total non-current assets		<u>4,114,274</u>	<u>111,360</u>	<u>4,225,634</u>
Total assets		<u>₩ 13,696,615</u>	<u>₩ (420,441)</u>	<u>₩ 13,276,174</u>
Liabilities				
Current liabilities				
Trade and other payables		₩ 2,473,849	₩ -	₩ 2,473,849
Short-term financial liabilities		3,061,155	-	3,061,155
Income tax payable		72,198	-	72,198
Current provisions	(*2)	-	76,201	76,201
Other current liabilities	(*1)(*2)(*3)	2,974,051	(170,823)	2,803,228
Total current liabilities		<u>8,581,253</u>	<u>(94,622)</u>	<u>8,486,631</u>
Non-current liabilities				
Long-term trade and other payables		8,588	-	8,588
Long-term financial liabilities		1,018,028	-	1,018,028
Net defined benefit liabilities		55,407	-	55,407
Non-current provisions	(*3)	441,020	(473)	440,547
Deferred tax liabilities		27,544	-	27,544
Other non-current liabilities		325,060	-	325,060
Total non-current liabilities		<u>1,875,647</u>	<u>(473)</u>	<u>1,875,174</u>
Total liabilities		<u>10,456,900</u>	<u>(95,095)</u>	<u>10,361,805</u>
Equity				
Equity attributable to owners of the parent				
Issued capital		358,376	-	358,376
Share premium		627,156	-	627,156
Other components of equity		(87,207)	-	(87,207)
Accumulated other comprehensive loss		(65,365)	-	(65,365)
Retained earnings	(*1)(*3)(*4)	2,334,346	(325,346)	2,009,000
		<u>3,167,306</u>	<u>(325,346)</u>	<u>2,841,960</u>
Non-controlling interests		72,409	-	72,409
Total equity		<u>3,239,715</u>	<u>(325,346)</u>	<u>2,914,369</u>
Total liabilities and equity		<u>₩ 13,696,615</u>	<u>₩ (420,441)</u>	<u>₩ 13,276,174</u>

35. Changes in accounting policies (cont'd)

35.2 Revenue from contracts with customers (cont'd)

35.2.1 Statements of financial position (cont'd) (Korean won in millions)

(*1) Obligation to perform at one point in time

Where the Group can reliably estimate the outcome of a construction contract, the Group recognizes revenue on a progressive basis over the period, but KIFRS 1115 recognizes revenue over a period only if one of the following criteria is met.

- The customer simultaneously receives and consumes the benefits provided by the entity's performance as the entity performs.
- The Group's performance creates or enhances an asset that the customer controls as the asset is created or enhanced.
- The Group'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.

The Group recognized revenue for performance obligation (delivery basis) at one point in time for contract that does not meet the requirements to recognize the revenue over the period of construction contract as a developer & constructor. As a result, inventories increased by ₩ 20,216 million as of the initial application date, trade receivables and other receivables decreased by ₩ 32,820 million, other current liabilities increased by ₩ 25,531 million, and retained earnings decreased by ₩ 38,135 million (Note 23).

(*2) Deletion of disclosures and presentation of contract assets and contract liabilities

The total amount of unbilled construction under the previous standard is presented by deducting the total amount of losses recognized and progress billings from accumulated costs incurred and profits recognized. The total amount of overbilled construction is presented by deducting accumulated costs incurred and profits recognized from total amount of losses recognized and progress billings. Under KIFRS 1115, these disclosure criteria have been deleted.

As a result, the Group's contract assets increased by ₩ 29,733 million, the current provision increased by ₩ 76,201 million and other current liabilities decreased by ₩ 46,468 million as of January 1, 2018. In accordance with KIFRS 1115, contractual assets and liabilities have been reduced by ₩ 181,168 million, respectively, as a result of presenting contractual assets and liabilities on a net basis (Notes 8 and 20).

(*3) Accounting for contract costs

The Group capitalizes the incremental costs of obtaining a contract or contract costs incurred directly related to contract and created resources used to fulfill a contract and expected to be recovered. If capitalization requirements are not met, it is accounted for as current expenses. As a result of the application of the standard, other current assets and retained earnings as of the initial application date decreased by ₩ 330,920 million, respectively. As a result of this accounting change, the percentage-of-completion of the ongoing project was adjusted as of the end of the previous year. Accordingly, contract assets decreased by ₩ 36,841 million, other current liabilities increased by ₩ 31,282 million and non-current liabilities decreased by ₩ 473 million, and retained earnings decreased by ₩ 67,650 million (Notes 8, 9 and 23).

(*4) Tax effect

Deferred income tax assets and retained earnings as of the initial application date have increased by ₩ 111,360 million, respectively, due to the cumulative effect adjustment of KIFRS 1115 (Note 28).

35. Changes in accounting policies (cont'd)

35.2 Revenue from contracts with customers (cont'd)

35.2.2 The items in the financial statements that are affected by the previous standard for the initial application of KIFRS 1115 are as follows (Korean won in millions):

(1) Statements of financial position

	2018	Adjustment	If KIFRS 1115 does not apply
Assets			
Current assets			
Cash and cash equivalents	₩ 1,592,619	₩ -	₩ 1,592,619
Trade and other receivables, net	4,297,385	134,330	4,431,715
Inventories	1,034,195	(31,903)	1,002,292
Short-term financial assets	295,205	-	295,205
Other current assets	608,761	354,549	963,310
Total current assets	7,828,165	456,976	8,285,141
Non-current assets			
Property, plant and equipment, net	841,048	-	841,048
Intangible assets, net	215,664	-	215,664
Investment properties	915,828	-	915,828
Investments in associates	73,491	-	73,491
Long-term trade and other receivables, net	946,330	-	946,330
Long-term financial assets	194,151	-	194,151
Deferred tax assets	788,390	(143,315)	645,075
Financial assets at fair value through profit or loss	230,208	-	230,208
Total non-current assets	4,205,110	(143,315)	4,061,795
Total assets	₩ 12,033,275	₩ 313,661	₩ 12,346,936
Liabilities			
Current liabilities			
Trade and other payables	₩ 2,023,490	₩ -	₩ 2,023,490
Short-term financial liabilities	1,118,162	-	1,118,162
Income tax payable	181,500	-	181,500
Current provisions	118,472	(86,784)	31,688
Other current liabilities	2,918,104	79,383	2,997,487
Total current liabilities	6,359,728	(7,401)	6,352,327
Non-current liabilities			
Long-term financial liabilities	1,147,180	-	1,147,180
Net defined benefit liabilities	72,787	-	72,787
Non-current provisions	533,924	617	534,541
Deferred tax liabilities	5,858	-	5,858
Other non-current liabilities	289,112	-	289,112
Total non-current liabilities	2,048,861	617	2,049,478
Total liabilities	8,408,589	(6,784)	8,401,805
Equity			
Equity attributable to owners of the parent			
Issued capital	397,179	-	397,179
Share premium	811,768	-	811,768
Other components of equity	(70,463)	-	(70,463)
Accumulated other comprehensive loss	(77,045)	-	(77,045)
Retained earnings	2,487,073	320,445	2,807,518
	3,548,512	320,445	3,868,957
Non-controlling interests	76,174	-	76,174
Total equity	3,624,686	320,445	3,945,131
Total liabilities and equity	₩ 12,033,275	₩ 313,661	₩ 12,346,936

35. Changes in accounting policies (cont'd)

35.2 Revenue from contracts with customers (cont'd)

35.2.2 The items in the financial statements that are affected by the previous standard for the initial application of KIFRS 1115 are as follows (cont'd) (Korean won in millions):

(2) Statements of comprehensive income

	2018	Adjustment	If KIFRS 1115 does not apply
Sales			
Construction operations	₩ 12,274,523	₩ (6,911)	₩ 12,267,612
Housing construction and sales operations	570,833	22,878	593,711
Other operations	294,017	-	294,017
	13,139,373	15,967	13,155,340
Cost of sales			
Cost of construction operations	10,775,214	24,918	10,800,132
Cost of housing construction and sales operations	444,309	11,688	455,997
Cost of other operations	292,285	-	292,285
Gross profit	1,627,565	(20,639)	1,606,926
Selling and administrative expenses	563,076	(47,694)	515,382
Operating profit	1,064,489	27,055	1,091,544
Other operating income	259,119	-	259,119
Other operating expenses	318,459	-	318,459
Share of profit of an associate and a joint venture	6,502	-	6,502
Finance income	106,444	-	106,444
Finance costs	283,046	-	283,046
Profit (loss) before income tax	835,049	27,055	862,104
Income tax expenses	247,615	7,886	255,501
Profit for the year	587,434	19,169	606,603
Other comprehensive income for the year	(21,779)	-	(21,779)
Total comprehensive income (loss) for the year	₩ 565,655	₩ 19,169	₩ 584,824
Earnings per share			
Basic earnings per share	₩ 7,788		₩ 8,045
Diluted earnings per share	7,136		7,361

(3) Cash flows

The 2018 consolidated statement of cash flows does not differ from that prepared in accordance with the changes in KIFRS 1115 in cash flows from operating activities, investing activities and financial activities.