HYUNDAI HEAVY INDUSTRIES CO., LTD.
AND SUBSIDIARY

Consolidated Financial Statements

December 31, 2020 and 2019

(With Independent Auditors' Report Thereon)

Contents

Independent Auditors' Report

Based on a report originally issued in Korean

The Board of Directors and Stockholder
Hyundai Heavy Industries Co., Ltd.:

Opinion

We have audited the consolidated financial statements of Hyundai Heavy Industries Co., Ltd. and its subsidiary (the "Group"), which comprise the consolidated statements of financial position as of December 31, 2020 and 2019, the consolidated statements of comprehensive loss, changes in equity and cash flows for the twelve-month period ended December 31, 2020 and the seven-month period ended December 31, 2019 and notes, comprising 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, 2020 and 2019, and its consolidated financial performance and its consolidated cash flows for the twelve-month period ended December 31, 2020 and the seven-month period ended December 31, 2019 in accordance with Korean International Financial Reporting Standards ("K-IFRS").

Basis for Opinion

We conducted our audits in accordance with Korean Standards on Auditing (KSAs). Our responsibilities under those standards are further described in the *Auditors' 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 audit 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.

Other Matter

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

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 K-IFRS, 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.

Auditors' 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 auditors' 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 KSAs 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 KSAs, 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 in the preparation of the consolidated financial statements 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 auditors' 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 auditors' 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.

Seoul, Korea
March 12, 2021

This report is effective as of March 12, 2021, the audit report date. Certain subsequent events or circumstances, which may occur between the audit report date and the time of reading this report, could have a material impact on the accompanying consolidated financial statements and notes thereto. Accordingly, the readers of the audit report should understand that the above audit report has not been updated to reflect the impact of such subsequent events or circumstances, if any.

HYUNDAI HEAVY INDUSTRIES CO., LTD. AND SUBSIDIARY

Consolidated Statements of Financial Position

As of December 31, 2020 and 2019

(In thousands of won)

	Note		2020	2019
Assets				
Cash and cash equivalents	*5,6,38,39*	₩	1,314,823,009	993,633,434
Short-term financial assets	*5,7,8,14,38,39*		554,200,000	569,170,020
Trade and other receivables	*9,29,38,39,42*		892,052,823	1,315,268,078
Contract assets	*9,29,38,39*		2,624,966,001	2,548,128,451
Inventories	*10*		778,986,820	816,502,491
Derivative assets	*24,38,39*		156,620,038	34,585,339
Firm commitment assets	*24*		3,047,425	51,976,749
Current tax assets			3,188,862	3,473,870
Non-current assets held for sale	*30,43*		-	5,037,255
Other current assets	*11*		671,476,532	747,408,114
Total current assets			6,999,361,510	7,085,183,801
Investments in associate	*12,42*		946,000	-
Long-term financial assets	*5,7,8,14,38,39*		9,560,272	9,560,272
Long-term trade and other receivables	*9,29,38,39,42*		52,983,547	48,985,247
Investment property	*15*		4,306,755	4,452,018
Property, plant and equipment	*16*		6,020,305,589	6,097,536,347
Intangible assets	*18*		64,962,107	58,244,867
Right-of-use assets	*17*		15,594,635	8,603,353
Derivative assets	*24,38,39*		68,482,292	59,665,043
Firm commitment assets	*24*		4,429	33,270,468
Deferred tax assets	*35*		532,393,763	463,122,987
Other non-current assets	*11,22*		30,756,950	834,372
Total non-current assets			6,800,296,339	6,784,274,974
Total assets		₩	13,799,657,849	13,869,458,775

See accompanying notes to the consolidated financial statements.

HYUNDAI HEAVY INDUSTRIES CO., LTD. AND SUBSIDIARY

Consolidated Statements of Financial Position, Continued

As of December 31, 2020 and 2019

(In thousands of won)

	Note		2020	2019
Liabilities				
Short-term financial liabilities	*5,19,21,38,39,40*	₩	2,507,268,514	2,020,448,874
Current lease liabilities	*19,21,38,39*		7,731,161	5,408,929
Trade and other payables	*20,38,39,42*		1,645,647,882	1,679,589,205
Contract liabilities	*29*		1,409,196,944	1,701,665,252
Advances from customers			-	866,244
Short-term provisions	*23,29,38,39*		283,667,657	383,967,288
Derivative liabilities	*24,38,39*		12,774,924	102,356,753
Firm commitment liabilities	*24*		110,636,035	19,955,865
Total current liabilities			5,976,923,117	5,914,258,410
Long-term financial liabilities	*5,19,21,38,39,40*		2,039,417,620	1,881,949,929
Non-current lease liabilities	*19,21,38,39*		8,612,448	3,244,049
Long-term trade and other payables	*20,38,39,42*		211,771	215,107
Long-term contract liabilities	*29*		11,070,445	11,317,161
Liabilities for defined benefit plans	*22*		36,325,250	71,725,798
Non-current provisions	*23*		275,207,723	278,037,023
Derivative liabilities	*24,38,39*		24,620,590	37,386,492
Firm commitment liabilities	*24*		66,484,264	48,417,364
Total non-current liabilities			2,461,950,111	2,332,292,923
Total liabilities			8,438,873,228	8,246,551,333
Equity				
Common stock	*25*		353,865,580	353,865,580
Capital surplus	*25*		4,639,942,059	4,639,942,059
Capital adjustments	*26*		(1,411,000)	(1,411,000)
Accumulated other comprehensive income	*24,27*		873,473,232	735,432,323
Accumulated deficit	*28*		(505,085,250)	(104,921,520)
Total equity			5,360,784,621	5,622,907,442
Total liabilities and equity		₩	13,799,657,849	13,869,458,775

See accompanying notes to the consolidated financial statements.

HYUNDAI HEAVY INDUSTRIES CO., LTD. AND SUBSIDIARY

Consolidated Statements of Comprehensive Loss

For the twelve-month period ended December 31, 2020 and the seven-month period ended December 31, 2019

(In thousands of won, except per share information)

	Note		2020	2019
Sales	*24,29,30,42*	₩	8,312,009,823	5,456,667,592
Cost of sales	*10,24,32,42*		7,837,882,674	5,040,235,338
Gross profit			474,127,149	416,432,254
Selling, general and administrative expenses	*31,32,38*		441,618,088	286,951,965
Operating profit			32,509,061	129,480,289
Finance income	*24,33,38*		762,180,290	293,531,424
Finance costs	*24,33,38*		780,590,122	262,474,495
Other non-operating income	*24,34*		88,958,743	54,844,304
Other non-operating expenses	*24,34*		643,170,420	318,885,972
Loss before income tax			(540,112,448)	(103,504,450)
Income tax benefit	*35*		(108,666,550)	(14,559,322)
Loss for the period			(431,445,898)	(88,945,128)
Other comprehensive income (loss)	*24,27,38*			
Items that are or may be reclassified subsequently to profit or loss:				
Effective portion of changes in fair value of cash flow hedges		₩	244,179	1,417,235
Translation differences related to foreign operation			(35,219)	-
Total items that are or may be reclassified subsequently to profit or loss			208,960	1,417,235
Items that will not be reclassified to profit or loss:				
Changes in fair value of financial assets measured at FVOCI			-	(459,090)
Actuarial gains and losses			31,048,904	(4,677,478)
Revaluation of property, plant and equipment			138,065,213	(1,830,551)
Total items that will not be reclassified to profit or loss			169,114,117	(6,967,119)
Other comprehensive income (loss) for the period, net of income tax			169,323,077	(5,549,884)
Total comprehensive loss for the period		₩	(262,122,821)	(94,495,012)
Loss per share	*36*			
Basic loss per share (In won)		₩	(6,096)	(1,416)

See accompanying notes to the consolidated financial statements.

HYUNDAI HEAVY INDUSTRIES CO., LTD. AND SUBSIDIARY

Consolidated Statements of Changes in Equity

For the twelve-month period ended December 31, 2020 and the seven-month period ended December 31, 2019

(In thousands of won)

		Common stock	Capital surplus	Hybrid bonds	Capital adjustments	Accumulated other comprehensive income	Accumulated deficit	Total equity
Balance at June 1, 2019	₩	353,865,580	4,641,670,638	428,589,000	-	736,304,729	-	6,160,429,947
Total comprehensive income (loss) for the period								
Loss for the period		-	-	-	-	-	(88,945,128)	(88,945,128)
Changes in fair value of financial assets measured at FVOCI		-	-	-	-	(459,090)	-	(459,090)
Effective portion of changes in fair value of cash flow hedges		-	-	-	-	1,417,235	-	1,417,235
Actuarial gains and losses		-	-	-	-	-	(4,677,478)	(4,677,478)
Revaluation of property, plant and equipment		-	-	-	-	(1,830,551)	-	(1,830,551)
Transactions with owners of the Company, recognized directly in equity								
Repayment of hybrid bonds		-	-	(428,589,000)	(1,411,000)	-	-	(430,000,000)
Interest for hybrid bonds		-	-	-	-	-	(11,298,914)	(11,298,914)
Other								
Establishment costs of corporation		-	(1,728,579)	-	-	-	-	(1,728,579)
Balance at December 31, 2019	₩	353,865,580	4,639,942,059	-	(1,411,000)	735,432,323	(104,921,520)	5,622,907,442
Balance at January 1, 2020	₩	353,865,580	4,639,942,059	-	(1,411,000)	735,432,323	(104,921,520)	5,622,907,442
Total comprehensive income (loss) for the period								
Loss for the period		-	-	-	-	-	(431,445,898)	(431,445,898)
Effective portion of changes in fair value of cash flow hedges		-	-	-	-	244,179	-	244,179
Actuarial gains and losses		-	-	-	-	-	31,048,904	31,048,904
Revaluation of property, plant and equipment		-	-	-	-	138,065,213	-	138,065,213
Translation differences related to foreign operation		-	-	-	-	(35,219)	-	(35,219)
Other								
Reclassification of revaluation surplus		-	-	-	-	(233,264)	233,264	-
Balance at December 31, 2020	₩	353,865,580	4,639,942,059	-	(1,411,000)	873,473,232	(505,085,250)	5,360,784,621

See accompanying notes to the consolidated financial statements.

HYUNDAI HEAVY INDUSTRIES CO., LTD. AND SUBSIDIARY

Consolidated Statements of Cash Flows

For the twelve-month period ended December 31, 2020 and the seven-month period ended December 31, 2019

(In thousands of won)

	Note		2020	2019
Cash flows from operating activities				
Loss for the period		₩	(431,445,898)	(88,945,128)
Adjustments			359,202,540	(468,314,901)
Cash generated from operations	*37*		(72,243,358)	(557,260,029)
Interest received			30,901,062	29,144,368
Interest paid			(137,053,971)	(63,673,547)
Dividends received			34,280	-
Income taxes refund (paid)			(21,637,830)	6,627,064
Net cash used in operating activities			(199,999,817)	(585,162,144)
Cash flows from investing activities				
Proceeds from collection of short-term financial assets			593,916,220	967,003,210
Proceeds from collection of short-term other receivables			428,400	1,355,400
Proceeds from collection of long-term financial assets			2,021	12,000
Proceeds from collection of long-term other receivables			3,314,581	67,055
Proceeds from sales of property, plant and equipment			7,448,098	12,354,015
Proceeds from sales of intangible assets			54,338	-
Proceeds from sales of non-current assets held for sale			6,911,777	796,544
Acquisition of short-term financial assets			(578,946,200)	(594,081,376)
Acquisition of short-term other receivables			(4,658,800)	(15,568,900)
Acquisition of investment in associate			(946,000)	-
Acquisition of long-term financial assets			(2,100)	(9,550,655)
Acquisition of long-term other receivables			(4,727,636)	(497,246)
Acquisition of investment property			(17,008)	(51,694)
Acquisition of property, plant and equipment			(226,249,451)	(159,399,008)
Acquisition of intangible assets			(9,860,679)	(5,372,718)
Cash flows from business transfer			12,291,176	-
Cash paid for in business acquisition			-	(18,892,947)
Net cash provided by (used in) investing activities			(201,041,263)	178,173,680
Cash flows from financing activities				
Proceeds from short-term financial liabilities			2,204,233,405	2,048,905,222
Proceeds from long-term financial liabilities			2,307,122,000	654,711,000
Repayment of financial liabilities			(3,771,638,365)	(2,049,068,930)
Repayment of lease liabilities			(9,560,585)	(2,392,644)
Interest for hybrid bonds paid			-	(15,750,000)
Repayment of hybrid bonds			-	(430,000,000)
Establishment costs of corporation			-	(1,728,579)
Net cash provided by financing activities			730,156,455	204,676,069
Effects of exchange rate changes on cash and cash equivalents			(7,925,800)	(2,945,987)
Net increase (decrease) in cash and cash equivalents			321,189,575	(205,258,382)
Cash and cash equivalents at January 1, 2020 and June 1, 2019			993,633,434	1,198,891,816
Cash and cash equivalents at December 31		₩	1,314,823,009	993,633,434

See accompanying notes to the consolidated financial statements.

1. Reporting Entity

(1) Description of the controlling company

Hyundai Heavy Industries Co., Ltd. (the "Parent company") was newly established through a split-off from Korea Shipbuilding & Offshore Engineering Co., Ltd. (known as Hyundai Heavy Industries Co., Ltd. before split-off, existing entity) on June 1, 2019 (inception date) and is engaged in the manufacture and sale of ships, offshore structures, plants, engines and other products. The financial statements presented here in are as of December 31, 2020 and 2019, and for the year ended December 31, 2020 ("the period ended December 31, 2020") and the seven-month period ended December 31, 2019 ("the period ended December 31, 2019").

The Parent company's head office is located in Ulsan. As of December 31, 2020, the Parent company's sole stockholder is the Korea Shipbuilding & Offshore Engineering Co., Ltd. (100%).

(2) Consolidated subsidiary

Subsidiary as of December 31, 2020 and 2019 is summarized as follows:

Company	Main business	Location	Fiscal year end	Ownership (%) 2020	Ownership (%) 2019
Hyundai Heavy Industries Free Zone Enterprise (*)	Industrial plant construction	Nigeria	December	100.00	-

(*) For the period ended December 31, 2020, it was newly established in Nigeria to carry out construction work for local construction.

(3) Changes in scope of consolidation

Company	Reason
Hyundai Heavy Industries Free Zone Enterprise	Establishment

(4) Condensed financial information of consolidated subsidiary

Condensed financial information of consolidated subsidiary as of and for the period ended December 31, 2020 is summarized as follows:

(In millions of won)

Company		Assets	Liabilities	Equity	Sales	Profit	Total comprehensive loss
Hyundai Heavy Industries Free Zone Enterprise	₩	395	293	102	2,120	17	(19)

(5) Non-controlling interests

There is no information relating to the non-controlling interests of subsidiary as of December 31, 2020.

2. Basis of Preparation

The Parent company and its subsidiary ("the Group") prepared the consolidated financial statements in accordance with Korean International Financial Reporting Standards ("K-IFRS"), as prescribed in Article 5, Clause 1 of *the Act on External Audit of Stock Companies, Etc.* of the Republic of Korea.

The consolidated financial statements were authorized for issue by the Board of Directors on February 3, 2021 and will be submitted for approval to the stockholder's meeting to be held on March 22, 2021.

(1) Basis of measurement

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

- Derivative financial instruments measured at fair value
- Financial assets measured at FVTPL measured at fair value
- Financial assets measured at FVOCI measured at fair value
- Lands measured at fair value
- Liabilities for defined benefit plans recognized at the net of the total present value of defined benefit obligations less the fair value of plan assets

(2) Functional and presentation currency

The financial statements of individual entities within the Group are prepared in functional currency, which is the currency of the primary economic environment in which the individual entities operate. The consolidated financial statements are prepared and presented in Korean won, which is the Parent Company's functional currency and presentation currency.

(3) Use of estimates and judgments

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

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

For the period ended December 31, 2020, the spread of the COVID-19 pandemic has materially affected the global economy. This may have negative impacts on productivity, decrease or delay in recognition of sales, or collection of outstanding accounts receivable, which could negatively affect the Group's financial position and financial performance. The significant accounting estimates and assumptions used in preparing the consolidated financial statements of the Group may be adjusted due to changes uncertainty under COVID-19. The ultimate impact from COVID-19 on the Group's business, financial position and financial performance may differ from the estimates recognized in the accompanying consolidated financial statements.

(i) Judgments

Information about critical judgements in applying accounting policies that have the most significant effect on the amounts recognized in the consolidated financial statements is included in the following notes:

- Note 4: Lease term – whether the Group is reasonably certain to exercise extension options;
- Note 4: Timing of revenue recognition;
- Note 12: Investment in associates - whether the Group has significant influence over an investee;
- Note 13: Classification of joint arrangements; and
- Note 15: Classification of investment property

2. Basis of Preparation, Continued

(3) Use of estimates and judgements, continued

(ii) Assumptions and estimation uncertainties

Information about assumptions and estimation uncertainties that have a significant risk of resulting in a material adjustment within the next financial year is included in the following notes:

- Note 5 and 39: Measurement of expected credit loss on trade receivables and contract assets – key assumption about determining weighted-average loss rate;
- Note 11, 16 and 18: Impairment test – key assumptions underlying recoverable amounts, including the recoverability of other current assets, property and intangible assets;
- Note 22: Measurement of defined benefit obligations – key actuarial assumptions;
- Note 23, 40 and 41: Recognition and measurement of provisions and contingencies – key assumption about the likelihood and magnitude of an outflow of resources;
- Note 29: Revenue recognition in proportion to the stage of completion, the estimates of total contract costs; and
- Note 35: Measurement of deferred tax.

(iii) Measurement of fair value

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

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

Significant valuation issues are reported to the Group's Audit Committee.

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

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

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

2. Basis of Preparation, Continued

(3) Use of estimates and judgements, continued

(iii) Measurement of fair value, continued

Further information about the assumptions made in measuring fair values is included in the following notes:

- Note 14: Financial assets measured at fair value;
- Note 15: Investment property;
- Note 16: Property, plant and equipment;
- Note 39: Financial instruments; and
- Note 45: Business acquisition

3. Changes in Accounting Policies

(1) New and revised standards adopted by the Group

The Group has initially adopted the following new standards and amendments which are effective from January 1, 2020. The Group has not early adopted the new standards, interpretations or amendments which have been published but are not mandatory.

(i) K-IFRS No. 1103 '*Business Combinations*' amendment (Definition of a business)

The amendment to K-IFRS No. 1103 specifies that, to be considered a business, an integrated set of activities and assets must include, at minimum, an input and a substantive process that together significantly contribute to the ability to create output. It is also clarified that a business need not include all the inputs or processes to create output. This amendment has no significant effect on the Group's consolidated financial statements but , if business combination occurs, it could have an effect .

(ii) K-IFRS No. 1107 '*Financial Instruments: Disclosures*', K-IFRS No. 1109 '*Financial Instruments*', K-IFRS No. 1039 '*Financial Instruments: Recognition and Measurement*' amendments (Interest rate benchmark reform)

These amendments to K-IFRS No. 1109 and K-IFRS No. 1039 provide an exception for all hedging relationships directly affected by interest rate benchmark reform. A hedging relationship is affected by interest rate benchmark reform if the reform gives rise to uncertainties about the timing or the amount of interest rate benchmark-based cash flows of the hedged item or the hedging instrument. The Group has interest rate hedging relationships, but the amendments have no significant effect on its consolidated financial statements.

(iii) K-IFRS No. 1001 '*Presentation of Financial Statements*', K-IFRS No. 1008 '*Accounting Policies, Changes in Accounting Estimates and Errors*' amendments (Definition of material)

These amendments provide a new definition of material. According to the new definition, 'information is material if omitting, misstating or obscuring it could reasonably be expected to influence decisions that the primary users of general-purpose financial statements make on the basis of those financial statements, which provide financial information about a specific reporting entity'.

These amendments clarify that material is determined by the nature or size of the information, individually or in combination with other information, in the context of its financial statements. The information is material if it is reasonably expected that the misstatement of information will influence the decisions of the primary users. These amendments have no significant effect on the Group's consolidated financial statements.

3. Changes in Accounting Policies, Continued

(1) New and revised standards adopted by the Group, continued

(iv) COVID-19-Related Rent Concession (Amendment to K-IFRS No. 1116 ‘*Leases*’)

These amendments introduce a practical expedient for lessees – i.e. a lessee is not required to assess whether eligible rent concessions that are a direct consequence of COVID-19 pandemic are lease modification. These rent concessions have to meet all of the criteria to qualify for the practical expedient, and if they were not lease modifications, a lessee that applies the practical expedient accounts for them in accordance with other applicable guidance. This amendment is effective for periods beginning on or after June 1, 2020, with earlier application permitted. This amendment has no significant impact on the Group’s consolidated financial statements.

(v) Conceptual Framework for Financial Reporting (2018)

The conceptual framework is not an accounting standard, and any contents of the conceptual framework overrides any accounting standards or its requirements. The purpose of the conceptual framework is to assist the Korea Accounting Standards Board to establish and amend K-IFRS and help preparers to develop consistent accounting policies when there are no accounting standards to apply. It also assists all parties to understand and interpret the accounting standards.

The revised conceptual framework includes some new concepts, suggests changes to the definition and recognition criteria of assets and liabilities, and clarifies some important concepts. This amendment has no significant effect on the Group’s consolidated financial statements.

4. Significant Accounting Policies

The significant accounting policies applied by the Group in the preparation of the consolidated financial statements in accordance with K-IFRS are included below. The accounting policies set out below have been applied consistently to all periods presented in these consolidated financial statements except for the changes in accounting policies as explained in *Note 3*.

(1) Operating segments

An operating segment is a component of the Group that engages in business activities from which it may earn revenues and incur expenses, including revenues and expenses that relate to transactions with any of the Group’s other components. All operating segment operating results are reviewed regularly by the Group’s chief executive officer (CEO) to make decisions about resources to be allocated to the segment and assess its performance, and for which discrete financial information is available. As discussed in *Note 30* the Group has four reportable segments which are the Group’s strategic business units. The strategic business units offer different products and services and are managed separately because they require different technology and marketing strategies.

Segment results that are reported to the CEO include items directly attributable to a segment as well as those that can be allocated on a reasonable basis.

4. Significant Accounting Policies, Continued

(2) Basis of consolidation

(i) Business combinations

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

The consideration transferred in the acquisition is generally measured at fair value, as are the identifiable net assets acquired. Any goodwill that arises is tested annually for impairment. Any gain on a bargain purchase is recognized in profit or loss immediately. Transaction costs are expensed as incurred, except if related to the issue of debt or equity securities. The costs to issue debt or equity securities are recognized in accordance with K-IFRS No. 1032 and K-IFRS No. 1109.

The consideration transferred does not include amounts related to the settlement of pre-existing relationships. Such amounts are generally recognized in profit or loss.

Any contingent consideration is measured at fair value at the acquisition date. If the contingent consideration is classified as equity, then it is not remeasured and settlement is accounted for within equity. Otherwise, subsequent changes in the fair value of the contingent consideration are recognized in profit or loss.

If share-based payment awards (replacement awards) are required to be exchanged for awards held by the acquiree's employees (acquiree's awards), then all or a portion of the amount of the acquirer's replacement awards is included in measuring the consideration transferred in the business combination. This determination is based on the market-based measure of the replacement awards compared with the market-based measure of the acquiree's awards and the extent to which the replacement awards relate to pre-combination service.

(ii) Subsidiaries

Subsidiaries are entities controlled by the Group. The Group controls an entity when it is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. The financial statements of subsidiaries are included in the consolidated financial statements from the date on which control commences until the date on which control ceases.

(iii) Non-controlling interests

Non-controlling interests are measured initially at their proportionate share of the acquiree's identifiable net assets at the date of acquisition. Changes in the Group's interest in a subsidiary that do not result in a loss of control are accounted for as equity transactions.

(iv) Loss of control

When the Group loses control over a subsidiary, it derecognizes the assets and liabilities of the subsidiary, and any related NCI and other components of equity. Any resulting gain or loss is recognized in profit or loss. Any interest retained in the former subsidiary is measured at fair value when control is lost.

4. Significant Accounting Policies, Continued

(2) Basis of consolidation, continued

(v) Interests in equity-accounted investees

The Group's interests in equity-accounted investees comprise interests in associates.

Associates are those entities in which the Group has significant influence, but not control or joint control, over the financial and operating policies.

Interests in associates are accounted for using the equity method. They are recognized initially at cost, which includes transaction costs. Subsequent to initial recognition, the consolidated financial statements include the Group's share of the profit or loss and OCI of equity-accounted investees, until the date on which significant influence ceases.

(vi) Transactions eliminated on consolidation

Intra-group balances and transactions, and any unrealized income and expenses arising from intra-group transactions, are eliminated. Unrealized gains arising from transactions with equity-accounted investees are eliminated against the investment to the extent of the Group's interest in the investee. Unrealized losses are eliminated in the same way as unrealized gains, but only to the extent that there is no evidence of impairment.

(vii) Business combination of entities under common control

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

(3) Cash and cash equivalents

Cash and cash equivalents comprise cash balances, call deposits, short-term investments with maturities of three months or less from the acquisition date that are subject to an insignificant risk of changes in their fair value and are used by the Group in the management of its short-term commitments. Equity investments are excluded from cash equivalents unless they are, in substance, cash equivalents, for example in the case of preference shares when it has a short maturity with a specified redemption date.

(4) Inventories

The cost of inventories is based on the moving-average method with the exception of cost of materials-in-transit, which is determined on the specific identification method. Cost of inventories includes expenditures incurred in acquiring the inventories, production or conversion costs and other costs incurred in bringing them to their existing location and condition. Fixed manufacturing overhead costs among conversion costs are distributed based on the normal capacity of production facilities.

Inventories are measured at the lower of cost and net realizable value. Net realizable value is the estimated selling price in the ordinary course of business, less the estimated costs of completion and selling expenses. The amount of any write-down of inventories to net realizable value and all losses of inventories are recognized as an expense in the period the write-down or loss occurs. The amount of any reversal of any write-down of inventories, arising from an increase in net realizable value, is recognized as a reduction in the amount of inventories recognized as an expense in the period in which the reversal occurs.

4. Significant Accounting Policies, Continued

(5) Non-derivative financial assets

(i) Recognition and initial measurement

The Group initially recognizes trade receivables and debt securities issued on the date on which they are originated. Other financial assets and financial liabilities are recognized on trade date, which is the date on which the Group becomes a party to the contractual provisions of the instrument.

A financial asset (unless it is a trade receivable without a significant financing component) or financial liability is initially measured at fair value plus, for an item not at FVTPL, transaction costs that are directly attributable to its acquisition or issue. A trade receivable without a significant financing component is initially measured at the transaction price.

(ii) Classification and subsequent measurement

(a) Financial assets

On initial recognition, a financial asset is classified as measured at: amortized cost; FVOCI – debt investment; FVOCI – equity investment; or FVTPL.

Financial assets are not reclassified subsequent to their initial recognition unless the Group changes its business model for managing financial assets, in which case all affected financial assets are reclassified on the first day of the first reporting period following the change in the business model.

A financial asset is measured at amortized cost if it meets both of the following conditions and is not designated as at FVTPL:

- the asset is held within a business model whose objective is to hold assets to collect contractual cash flows; and
- its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

A debt investment is measured at FVOCI if it meets both of the following conditions and is not designated as at FVTPL:

- it is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets; and
- its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

On initial recognition of an equity investment that is not held for trading, the Group may irrevocably elect to present subsequent changes in the investment's fair value in OCI. Once the Group designates an equity investment, as at FVOCI the Group will not reclassify this item. This election is made on an investment-by-investment basis.

All financial assets not classified as measured at amortized cost or FVOCI as described above are measured at FVTPL. These financial assets include all derivative financial assets (See Note 24). In addition, on initial recognition, the Group may irrevocably designate a financial asset that otherwise meets the requirements to be measured at amortized cost or at FVOCI as at FVTPL if doing so eliminates or significantly reduces an accounting mismatch that would otherwise arise. Once the Group designates a financial asset as at FVTPL, the Group will not reclassify this item to amortized cost or FVOCI subsequently.

4. Significant Accounting Policies, Continued

(5) Non-derivative financial assets, continued

(ii) Classification and subsequent measurement, continued

(b) Financial assets - Business model assessment

The Group makes an assessment of the objective of a business model in which an asset is held at a portfolio level because this best reflects the way the business is managed and information is provided to management. The information considered includes:

- the stated policies and objectives for the portfolio and the operation of those policies in practice. In particular, whether management's strategy focuses on earning contractual interest revenue, maintaining a particular interest rate profile, matching the duration of the financial assets to the duration of the liabilities that are funding those assets or realizing cash flows through the sale of the assets;
- how the performance of the portfolio is evaluated and reported to the Group's management;
- the risks that affect the performance of the business model (and the financial assets held within that business model) and its strategy for how those risks are managed;
- how managers of the business are compensated (e.g. whether compensation is based on the fair value of the assets managed or the contractual cash flows collected); and
- the frequency, volume and timing of sales in prior periods, the reasons for such sales and its expectations about future sales activity.

Transfers of financial assets to third parties in transactions that do not qualify for derecognition are not considered sales for this purpose, consistent with the Group's continuing recognition of the assets.

Financial assets that are held for trading or managed and whose performance is evaluated on a fair value basis are measured at FVTPL.

(c) Financial assets - Assessment of whether contractual cash flows are solely payments of principal and interest

For the purposes of this assessment, 'principal' is defined as the fair value of the financial asset on initial recognition. 'Interest' is defined as consideration for the time value of money and for the credit risk associated with the principal amount outstanding during a particular period of time and for other basic lending risks and costs (e.g. liquidity risk and administrative costs), as well as profit margin.

In assessing whether the contractual cash flows are SPPI, the Group considers the contractual terms of the instrument. This includes assessing whether the financial asset contains a contractual term that could change the timing or amount of contractual cash flows such that it would not meet this condition.

In making the assessment, the Group considers:

- contingent events that would change the amount and timing of cash flows;
- terms that may adjust the contractual coupon rate, including variable-rate features;
- prepayment and extension features; and
- terms that limit the Group's claim to cash flows from specified assets (e.g. non-recourse features)

A prepayment feature is consistent with the solely payments of principal and interest criterion if the prepayment amount substantially represents unpaid amounts of principal and interest on the principal amount outstanding, which may include reasonable additional compensation for early termination of the contract.

4. Significant Accounting Policies, Continued

(5) Non-derivative financial assets, continued

(ii) Classification and subsequent measurement, continued

(c) Financial assets - Assessment of whether contractual cash flows are solely payments of principal and interest, continued

Additionally, for a financial asset acquired at a discount or premium to its contractual par amount, a feature that permits or requires prepayment at an amount that substantially represents the contractual par amount plus accrued (but unpaid) contractual interest (which may also include reasonable additional compensation for early termination) is treated as consistent with this criterion if the fair value of the prepayment feature is insignificant at initial recognition.

(d) Financial assets – Subsequent measurement and gains and losses

Financial assets at FVTPL	These assets are subsequently measured at fair value. Net gains and losses, including any interest or dividend income, are recognized in profit or loss.
Financial assets at amortized cost	These assets are subsequently measured at amortized cost using the effective interest method. The amortized cost is reduced by impairment losses. Interest income, foreign exchange gains and losses and impairment are recognized in profit or loss. Any gain or loss on derecognition is recognized in profit or loss.
Debt investments at FVOCI	These assets are subsequently measured at fair value. Interest income calculated using the effective interest method, foreign exchange gains and losses and impairment are recognized in profit or loss. Other net gains and losses are recognized in OCI. On derecognition, gains and losses accumulated in OCI are reclassified to profit or loss.
Equity investments at FVOCI	These assets are subsequently measured at fair value. Dividends are recognized as income in profit or loss unless clearly represents a recovery of part of the cost of the investment. Other net gains and losses are recognized in OCI and are never reclassified to profit or loss.

(iii) Derecognition

The Group derecognizes a financial asset when the contractual rights to the cash flows from the financial asset expire, or it transfers the rights to receive the contractual cash flows in a transaction in which substantially all of the risks and rewards of ownership of the financial asset are transferred or in which the Group neither transfers nor retains substantially all of the risks and rewards of ownership and it does not retain control of the financial asset.

The Group enters into transactions whereby it transfers assets recognized on its statement of financial position, but retains either all or substantially all of the risks and rewards of the transferred assets. In such cases, the transferred assets are not derecognized.

(iv) Offsetting

Financial assets and financial liabilities are offset and the net amount presented in the statement of financial position when, and only when, the Group currently has a legally enforceable right to set off the amounts and it intends either to settle them on a net basis or to realize the asset and settle the liability simultaneously.

4. Significant Accounting Policies, Continued

(6) Derivative financial instruments

Derivatives are initially measured at fair value. Subsequent to initial recognition, derivatives are measured at fair value, and changes therein are recognized as described below:

(i) Hedge accounting

The Group holds forward exchange contracts to manage foreign exchange risk. The Group designated derivatives as hedging instruments to hedge the risk of changes in fair value of assets, liabilities or firm commitments (a fair value hedge) and foreign currency risk of highly probable forecasted transactions or firm commitments (a cash flow hedge).

On initial designation of the hedge, the Group formally documents the relationship between the hedging instrument(s) and hedged item(s), including the risk management objectives and strategy in undertaking the hedge transaction, together with the methods that will be used to assess the effectiveness of the hedging relationship.

(a) Fair value hedge

When a derivative is designated as a fair value hedging instrument, changes in fair value of the derivative is recognized in profit or loss. Changes in fair value of the hedged item attributable to hedged risk are also recognized in profit or loss. Changes in fair value of the hedging instrument and hedged item attributable to hedged risk are recognized in profit or loss in the same line of item of consolidated financial statements of comprehensive income. However, for hedges of equity investments at FVOCI, changes in fair value of the hedged item and the hedging instrument are recognized in other comprehensive income. The Group prospectively discontinues fair value hedge accounting if the hedging instrument expires or is sold, terminated or exercised, or if the fair value hedge no longer meets the criteria for hedge accounting.

(b) Cash flow hedge

When a derivative is designated as a cash flow hedging instrument, the effective portion of changes in fair value of the derivative is recognized in other comprehensive income and ineffective portion of changes in fair value of the derivative is recognized immediately in profit or loss.

If the cash flow hedge no longer meets the criteria for hedge accounting or the hedging instrument is sold, expires, is terminated, or is exercised, then hedge accounting is discontinued prospectively. When hedge accounting for cash flow hedges is discontinued, the amount that has been accumulated in the hedging reserve remains in equity, it is reclassified to profit or loss in the same period or periods as the hedged expected future cash flows affect profit or loss.

If the hedged future cash flows are no longer expected to occur, then the amounts that have been accumulated in the hedging reserve and the cost of hedging reserve are immediately reclassified to profit or loss.

4. Significant Accounting Policies, Continued

(6) Derivative financial instruments, continued

(ii) Separable embedded derivatives

Embedded derivatives are separated from the host contract and accounted for separately only if the following criteria have been met:
(a) The economic characteristics and risks of the embedded derivative are not closely related to those of the host contract;
(b) A separate instrument with the same terms as the embedded derivative would meet the definition of a derivative; and
(c) The hybrid instrument is not financial assets measured at FVTPL.

Changes in the fair value of separable embedded derivatives are recognized immediately in profit or loss.

(iii) Other derivative financial instruments

Changes in fair value of other derivative financial instrument not designated as a hedging instrument are recognized immediately in profit or loss.

(7) Impairment of financial assets

(i) Financial assets and contract assets

The Group recognizes loss allowances for ECLs on:
- financial assets measured at amortized cost;
- debt investments measured at FVOCI; and
- contract assets defined in K-IFRS No.1115.

The Group measures loss allowances at an amount equal to lifetime ECLs, except for the following, which are measured at 12-month ECLs:
- debt securities that are determined to have low credit risk at the reporting date; and
- other debt securities and bank balances for which credit risk (i.e. the risk of default occurring over the expected life of the financial instrument) has not increased significantly since initial recognition.

Loss allowances for trade receivables and contract assets are always measured at an amount equal to lifetime ECLs.

When determining whether the credit risk of a financial asset has increased significantly since initial recognition and when estimating ECLs, the Group considers reasonable and supportable information that is relevant and available without undue cost or effort. This includes both quantitative and qualitative information and analysis, based on the Group's historical experience and informed credit assessment that includes forward-looking information.

The Group considers a financial asset to be in default when:
- the debtor is unlikely to pay its credit obligations to the Group in full, without recourse by the Group to actions such as realizing security (if any is held); or
- a significant increase in overdue days of financial assets.

Lifetime ECLs are the ECLs that result from all possible default events over the expected life of a financial instrument.

12-month ECLs are the portion of ECLs that result from default events that are possible within the 12 months after the reporting date (or a shorter period if the expected life of the instrument is less than 12 months).

4. Significant Accounting Policies, Continued

(7) Impairment of financial assets, continued

(ii) Measurement of ECLs

ECLs are a probability-weighted estimate of credit losses. Credit losses are measured as the present value of all cash shortfalls (i.e. the difference between the cash flows due to the entity in accordance with the contract and the cash flows that the Group expects to receive). ECLs are discounted at the effective interest rate of the financial asset.

The maximum period considered when estimating ECLs is the maximum contractual period over which the Group is exposed to credit risk.

(iii) Credit-impaired financial assets

At each reporting date, the Group assesses whether financial assets carried at amortized cost and debt securities at FVOCI are credit-impaired. A financial asset is 'credit-impaired' when one or more events that have a detrimental impact on the estimated future cash flows of the financial asset have occurred.

Evidence that a financial asset is credit-impaired includes the following observable data:

- significant financial difficulty of the debtor or issuer;
- a breach of contract such as a default;
- the restructuring of a loan or advance by the Group on terms that the Group would not consider otherwise;
- it is probable that the debtor will enter bankruptcy or other financial reorganization; or
- the disappearance of an active market for a security because of financial difficulties.

(iv) Presentation of allowance for ECL in the statement of financial position

Loss allowances for financial assets measured at amortized cost are deducted from the gross carrying amount of the assets. For debt securities at FVOCI, the loss allowance is charged to profit or loss and is recognized in OCI.

In view of the importance of impairment losses related to trade receivables and other receivables, including contract assets, they are presented in 'selling, general and administrative expenses' or 'other non-operating expenses'. In view of the importance of other financial assets, impairment losses are not presented separately in the statement of comprehensive income but are presented in 'finance costs'.

(v) Write-off

The gross carrying amount of a financial asset is written off when the Group has no reasonable expectations of recovering a financial asset in its entirety or a portion thereof. The Group expects no significant recovery from the amount written off. However, financial assets that are written off could still be subject to enforcement activities in order to comply with the Group's procedures for recovery of amounts due.

4. Significant Accounting Policies, Continued

(8) Property, plant and equipment

Property, plant and equipment are initially measured at cost at the initial recognition. The cost of property, plant and equipment includes expenditures arising directly from the construction or acquisition of the asset, any costs directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management and the initial estimate of the costs of dismantling, removing the item and restoring the site on which it is located.

Subsequent to initial recognition, an item of property, plant and equipment excluding land is carried at its cost less any accumulated depreciation and any accumulated impairment losses. Subsequent to initial recognition land that fair value can be measured reliably is carried at its fair value at the date of revaluation less any accumulated impairment losses. Revaluations are made with sufficient regularity to ensure that the carrying amount does not differ materially from that which would be determined using fair value at the end of the reporting period.

Property, plant and equipment, except for land, are depreciated on a straight-line basis over estimated useful lives that appropriately reflect the pattern in which the asset's future economic benefits are expected to be consumed. A component that is significant compared to the total cost of property, plant and equipment is depreciated over its separate useful life.

Gains and losses on disposal of an item of property, plant and equipment are determined by comparing the proceeds from disposal with the carrying amount of property, plant and equipment and are recognized in profit or loss.

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

	Useful lives (years)
Buildings	25~50
Structures	20~45
Machinery and equipment	5~20
Ships	15, 25
Vehicles	5~14
Tools, furniture and fixtures	3~20

Depreciation methods, useful lives and residual values are reviewed at the end of each reporting period and adjusted, if appropriate. The change is accounted for as a change in an accounting estimate.

(9) Intangible assets

Intangible assets are measured initially at cost and, subsequently, are carried at cost less accumulated amortization and accumulated impairment losses.

Amortization of intangible assets except for goodwill is calculated on a straight-line basis over the estimated useful lives of intangible assets from the date that they are available for use. The residual value of intangible assets is zero. However, as there are no foreseeable limits to the periods over which some intangible assets are expected to be available for use, this intangible asset is determined as having indefinite useful lives and not amortized.

	Useful lives (years)
Development costs	5
Other intangible assets	20, 40
Memberships, Trademarks, Goodwill	Indefinite

4. Significant Accounting Policies, Continued

(9) Intangible assets, continued

Useful lives and the amortization methods for intangible assets with finite useful lives are reviewed at the end of each reporting period. The useful lives of intangible assets that are not being amortized are reviewed at the end of each reporting period to determine whether events and circumstances continue to support indefinite useful life assessments for those assets. Changes are accounted for as changes in accounting estimates.

(i) Research and development

Expenditures on research activities, undertaken with the prospect of gaining new scientific or technical knowledge and understanding, are recognized in profit or loss as incurred. Development expenditures are capitalized only if expenditures can be measured reliably, the product or process is technically and commercially feasible, future economic benefits are probable, and the Group intends and has sufficient resources to complete development and to use or sell the asset. Other development expenditures are recognized in profit or loss as incurred.

(ii) Subsequent expenditures

Subsequent expenditures are capitalized only when they increase the future economic benefits embodied in the specific asset to which it relates. All other expenditures, including expenditures on internally generated goodwill and brands, are recognized in profit or loss as incurred.

(10) Government grants

Government grants are only recognized if there is reasonable assurance that they will be received and the Group will comply with the conditions associated with the grant.

Government grants whose primary condition is that the Group purchase, construct or otherwise acquire long-term assets are deferred and recognized as deduction to depreciation expense over the useful life of the asset.

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

(11) Investment property

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

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

Investment property is depreciated on a straight-line basis over the following estimated useful lives:

	Useful lives (years)
Buildings	25~50

Depreciation methods, useful lives and residual values are reviewed at the end of each reporting period and adjusted, if appropriate. The change is accounted for as a change in an accounting estimate.

4. Significant Accounting Policies, Continued

(12) Impairment of non-financial assets

The carrying amounts of the Group's non-financial assets, other than assets arising from contract assets that are recognized according to the revenue from the contract with the customer, assets arising from the cost of entering into or fulfilling a contract, employee benefits, inventories, deferred tax assets and non-current assets held for sale, are reviewed at the end of the reporting period to determine whether there is any indication of impairment. If any such indication exists, then the asset's recoverable amount is estimated. Goodwill arising from a business combination, Intangible assets that have indefinite useful lives or that are not yet available for use, irrespective of whether there is any indication of impairment, are tested for impairment annually by comparing their recoverable amount to their carrying amount.

For impairment testing, assets are grouped together into the smallest group of assets that generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets ("CGUs"). The recoverable amount of an asset or CGU is the greater of its value in use and its fair value less costs to sell. Value in use is based on the estimate future cash flows, 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 or CGU.

An impairment loss is recognized in profit or loss if the carrying amount of an asset or a CGU exceeds its recoverable amount.

Goodwill arising from a business combination is allocated to CGUs or groups of CGUs that are expected benefit from the synergies of the combination. Impairment losses identified at CGU are allocated first to reduce the carrying amount of any goodwill allocated to the CGU, and then to reduce the carrying amounts of the other assets in the CGU on a pro rata basis. An impairment loss in respect of goodwill is not reversed. For other assets, an impairment loss is reversed if there is any indication that the impairment loss previously recognized is no longer exists or has been reduced and there is a change in the estimates used to determine the recoverable amount. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortization, if no impairment loss had been recognized.

(13) Leases

A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration.

At commencement or on modification of a contract, the Group assesses whether a contract is or contains a lease.

At commencement or on modification of a contract that contains a lease component, the Group allocates the consideration in the contract to each lease and non-lease component on the basis of their relative stand-alone prices. However, for the leases of property, the Group has elected practical expedient not to separate non-lease components and account for the lease and non-lease components as a single lease component.

4. Significant Accounting Policies, Continued

(13) Leases, continued

(i) As a lessee

The Group, as a lessee, has recognized right-of-use assets representing its rights to use the underlying assets and lease liabilities representing its obligation to make lease payments.

At the lease commencement date, the Group recognizes a right-of-use asset and a lease liability. The right-of-use asset is initially measured at cost. Subsequent to initial recognition, the right-of-use asset is carried at cost less any accumulated depreciation and any accumulated impairment losses, if any, and adjusted for certain remeasurements of the lease liability. The right-of-use assets that meet the definition of investment property is presented in the consolidated statements of financial position as investment property. The right-of-use assets that meet the definition of investment property is initially measured at cost and subsequent to initial recognition, the right-of-use asset is carried at cost less any accumulated depreciation and any accumulated impairment losses.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted using the interest rate implicit in the lease or, if that rate cannot be readily determined, the Group's incremental borrowing rate. Generally, the Group uses its incremental borrowing rate as the discount rate.

Subsequent to initial recognition, the lease liability increases by interests recognized for the lease liability and decreases by lease payments made. It is remeasured when there is a change in future lease payments arising from a change in an index or rate, if there is a change in the Group's estimate of the amount expected to be payable under a residual value guarantee or if the Group changes its assessment of whether it will exercise a purchase, extension or termination option.

The Group uses judgment when determining lease term for some lease contracts that include extension option. The assessment whether the Group is reasonably certain to exercise the extension option affects the lease term therefore has a significant impact on the amounts of the lease liability and right-of-use asset.

The Group has elected practical expedient not to recognize right-of-use assets and lease liabilities for leases of low-value assets and short-term leases. The Group recognizes the lease payments associated with these leases as an expense on a straight-line basis over the lease term.

(ii) As a lessor

When the Group acts as a lessor, it determines at lease inception whether each lease is a finance lease or an operating lease.

To classify each lease, the Group makes an overall assessment of whether the lease transfers substantially all of the risks and rewards incidental to ownership of the underlying asset. If this is the case, then the lease is a finance lease; if not, then it is an operating lease.

When the Group is an intermediate lessor. It assesses the lease classification of a sub-lease with reference to the right-of-use asset arising from the head lease, not with reference to the underlying asset.

If an arrangement contains lease and non-lease components, then the Group applies K-IFRS No.1115 '*Revenue from Contracts with Customers*' to allocate the consideration in the contract.

4. Significant Accounting Policies, Continued

(14) Contract assets and contract liability

If the Group performs the transfer of goods or services to the customer before the customer pays the consideration or before the payment date, the Group presents the contract as a contract asset, except as a receivable. Contract assets are the Group's rights to consideration for transfer of goods or services to the customer.

If the customer pays the consideration before the Group transfers goods or services to the customer, or the Group has an unconditional right to receive consideration (i.e. the receivable), the Group presents the contract as a contract liability either when it is paid or to be paid (early both).

Contract liabilities are the Group's obligation to transfer of goods or services to the customer in accordance with the consideration received from the customer or the consideration of the Company's rights to receive the payment. The Group offsets the contract assets and contract liabilities arising from one contract and presents them in the consolidated statements of financial position on a net basis.

On the other hand, expected losses in contracts (i.e. onerous contracts) that exceed the economic benefits expected to be received by the contract are recognized as current provisions.

(15) Non-current assets held for sale

Non-current assets, or disposal groups comprising assets and liabilities, are classified as held for sale if it is highly probable that they will be recovered primarily through sale rather than through continuing use, are classified as held for sale. In order to be classified as held for sale, the asset (or disposal group) must be available for immediate sale in its present condition and its sale must be highly probable. The assets or disposal group that are classified as non-current assets held for sale are measured at the lower of their carrying amount and fair value less cost to sell. An impairment loss for any subsequent decrease in fair value less costs to sell of an asset recognized impairment loss on initial classification and a gain for any subsequent increase in fair value less costs to sell, up to the cumulative impairment loss previously recognized, are recognized in profit or loss.

Once classified as held for sale, non-current assets are no longer amortized or depreciated.

(16) Borrowing costs

The Group capitalizes borrowing costs directly attributable to the acquisition, construction or production of a qualifying asset as part of the cost of that asset. Other borrowing costs are recognized in expense as incurred. A qualifying asset is an asset that requires a substantial period of time to get ready for its intended use or sale. Financial assets and inventories that are manufactured or otherwise produced over a short period of time are not qualifying assets. Assets that are ready for their intended use or sale when acquired are not qualifying assets.

To the extent that the Group borrows funds specifically for the purpose of obtaining a qualifying asset, the Group determines the amount of borrowing costs eligible for capitalization as the actual borrowing costs incurred from that borrowings less any investment income arising from the temporary investment of those borrowings, during the reporting period. To the extent that the Group borrows funds generally and uses them for the purpose of obtaining a qualifying asset, the Group determines the amount of borrowing costs eligible for capitalization by applying a capitalization rate to the expenditures related on that asset. The capitalization rate is calculated by the weighted average of the borrowing costs incurred from borrowed funds (excluding borrowed funds specifically for the purpose of obtaining a qualifying asset). The amount of borrowing costs that the Group capitalizes during the period shall not exceed the amount of borrowing costs incurred during that period.

4. Significant Accounting Policies, Continued

(17) Non-derivative financial liabilities

The Group classifies non-derivative financial liabilities into financial liabilities at fair value through profit or loss or other financial liabilities in accordance with the substance of the contractual arrangement and the definitions of financial liabilities. The Group recognizes financial liabilities in the consolidated statement of financial position when the Group becomes a party to the contractual provisions of the financial liability.

(i) Financial liabilities at fair value through profit or loss

Financial liabilities at fair value through profit or loss include financial liabilities held for trading or designated as such upon initial recognition. Subsequent to initial recognition, financial liabilities at fair value through profit or loss are measured at fair value, and changes therein are recognized in profit or loss. Upon initial recognition, transaction costs that are directly attributable to the acquisition are recognized in profit or loss as incurred.

(ii) Other financial liabilities

Non-derivative financial liabilities other than financial liabilities at fair value through profit or loss are classified as other financial liabilities. At the date of initial recognition, other financial liabilities are measured at fair value less transaction costs that are directly attributable to the acquisition. Subsequent to initial recognition, other financial liabilities are measured at amortized cost using the effective interest method.

(iii) Derecognition of financial liabilities

The Group derecognizes a financial liability when its contractual obligations are discharged, cancelled or expired. The Group derecognizes a financial liability when its terms are modified and the cash flows of the modified liability are substantially different. In this case, a new financial liability based on the modified terms is recognized at fair value.

On derecognition of a financial liability, the difference between the carrying amount extinguished and the consideration paid (including any non-cash assets transferred or liabilities assumed) is recognized in profit or loss.

4. Significant Accounting Policies, Continued

(18) Employee benefits

(i) Short-term employee benefits

Short-term employee benefits are employee benefits that are due to be settled within 12 months after the end of the period in which the employees render the related service. When an employee has rendered service to the Group during an accounting period, the Group recognizes the undiscounted amount of short-term employee benefits expected to be paid in exchange for that service as profit or loss.

(ii) Other long-term employee benefits

Other long-term employee benefits include employee benefits that are settled beyond 12 months after the end of the period in which the employees render the related service. The Group's net obligation in respect of long-term employee benefits is the amount of future benefit that employees have earned in return for their service in the current and prior periods. That benefit is discounted to determine its present value. Remeasurements are recognized in profit or loss in the period in which they arise.

(iii) Retirement benefits: defined benefit plans

The Group's net obligation in respect of defined benefit plans is calculated separately for each plan by estimating the amount of future benefit that employees have earned in the current and prior periods, discounting that amount and deducting the fair value of any plan assets.

The calculation of defined benefit obligations is performed annually by a qualified independent actuary using the projected unit credit method. When the calculation results in a potential asset for the Group, the recognized asset is limited to the present value of economic benefits available in the form of any future refunds from the plan or reductions in future contributions to the plan.

Remeasurements of the net defined benefit liability, which comprise actuarial gains and losses, the return on plan assets (excluding interest) and the effect of the asset ceiling (if any, excluding interest), are recognized immediately in other comprehensive income. The Group determines the net interest expense (income) on the net defined benefit liability (asset) for the period by applying the discount rate used to measure the defined benefit obligation at the beginning of the annual period to the then-net defined benefit liability (asset), taking into account any changes in the net defined benefit liability (asset) during the period as a result of contributions and benefit payments. Net interest expense and other expenses related to defined benefit plans are recognized in profit or loss.

When the benefits of a plan are changed or when a plan is curtailed, the resulting change in benefit that relates to past service or the gain or loss on curtailment is recognized immediately in profit or loss. The Group recognizes gains and losses on the settlement of a defined benefit plan when the settlement occurs.

(iv) Termination benefits

Termination benefits are expensed at the earlier of when the Group can no longer withdraw the offer of those benefits and when the Group recognizes costs for a restructuring. If benefits are not expected to be settled wholly within 12 months of the end of the reporting period, then they are discounted.

4. Significant Accounting Policies, Continued

(19) Provisions

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

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

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

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

(i) Provision for construction warranty

A provision for construction warranties is recognized when the rectification of defects on construction is expected, based on historical warranty data.

(ii) Provision for product warranty

A provision for product warranties is recognized in order to cover ordinary repair related to product defects within the specified period after sales.

(iii) Provision for construction losses

A provision for onerous contracts is measured at the lower of the expected cost of terminating the contract and the expected net cost of continuing with the contract, if unavoidable costs arising from the contractual obligations exceed the benefits expected to arise from the contract. Before a provision is established, the Group recognizes any impairment loss on the assets associated with that contract.

(iv) Other provision

In accordance with the announced environmental policy and appropriate legal requirements, the Group recognizes the cost of recovering from pollution and the constructive obligation due to performance guarantee as other provisions.

A provision shall be used only for expenditures for which the provision was originally recognized.

4. Significant Accounting Policies, Continued

(20) Emissions rights

The Group accounts for greenhouse gases emission right and the relevant liability as below pursuant to the *Act on Allocation and Trading of Greenhouse Gas Emission*.

(i) Greenhouse gases emission right

Greenhouse gases emission right consists of emission allowances which are allocated from the government free of charge or purchased from the market. Emission rights are recognized as purchase costs by adding other costs that are directly attributable to the acquisition and incurred during the normal course of business.

Emission rights held for the purpose of performing the obligation are classified as an intangible asset and are initially measured at cost and after initial recognition, are carried at cost less accumulated impairment losses. Emission rights held for short-swing profits are classified as current asset and are measured at fair value in each reporting period. Changes in fair value of emission rights held for short-swing profits are recognized in profit or loss.

The Group derecognizes emission rights when the emission allowance is unusable, disposed or submitted to government in which the future economic benefits are no longer expected to be probable.

(ii) Emission liability

Emission liability is a present obligation of submitting emission rights to the government with regard to emission of greenhouse gas. Emission liability is recognized when 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. Emission liability is estimated obligations for emission rights to be submitted to the government for the performing period. Emission liability is measured based on the expected quantity of emission for the performing period in excess of emission allowance in possession and the unit price for such emission rights in the market at of the end of the reporting period. Emission liability is derecognized when it is submitted to the government.

The Group was succeeded rights and obligations by Korea Shipbuilding & Offshore Engineering Co., Ltd. and has been designated as emission right trading company from the 2nd planning period (2018 to 2020). The quantities of emission rights which are allocated free of charge during the planning period are as follows:

(In ton)	**2019 (Seven-month period)**	**2020 (Full year)**	**Total**
Allocated emission right free of charge	446,958	766,214	1,213,172

As of December 31, 2020, there are no emission rights provided as collateral and the Group did not recognize emission rights and emission liabilities since the estimated quantity of greenhouse gases emission of 523,352 ton did not exceed allocated emission right.

4. Significant Accounting Policies, Continued

(21) Foreign currency

Transactions in foreign currencies are translated to the respective functional currencies of the Group at exchange rates at the dates of the transactions. Monetary assets and liabilities denominated in foreign currencies are translated into the functional currency at the exchange rate at the reporting date. Non-monetary assets and liabilities that are measured at fair value in a foreign currency are translated into the functional currency at the exchange rate when the fair value was determined. Non-monetary items that are measured based on historical cost in a foreign currency are translated at the exchange rate at the date of the transaction.

Foreign currency differences arising from translation of monetary items are recognized in profit or loss, except the differences arising from payment of monetary items, net investment in a foreign operation or a financial liability designated as cash flow hedges, which are recognized in other comprehensive income. When gains or losses on non-monetary items are recognized in other comprehensive income, effects of exchange rate changes included in that gains or losses are recognized in other comprehensive income. Conversely, when a gain or loss on a non-monetary item is recognized in profit or loss, any exchange component of that gain or loss is recognized in profit or loss.

(22) Equity capital

(i) Equity instruments

Ordinary shares are classified as equity. Incremental costs directly attributable to the issue of ordinary shares are recognized as a deduction from equity, net of any tax effects.

When shares recognized as equity are repurchased, the amount of the consideration paid is recognized as a deduction from equity and classified as treasury shares. Gains or losses from purchase, sold, reissue, or retirement of treasury shares are not recognized in profit or loss. When treasury shares are acquired and retained, the amount paid or received is directly recognized in equity.

(ii) Hybrid bonds

The Group classified capital securities in accordance with the substance of the contractual terms of capital securities as financial liabilities or equity instruments. Hybrid bonds that have an unconditional right to avoid delivering cash or financial assets to pay a contractual obligation are classified as equity instrument and are presented in part of equity.

4. Significant Accounting Policies, Continued

(23) Revenue from contracts with customers

Under K-IFRS No. 1115, revenue is recognized when the Group transfers control over a good or service to a customer. Control is transferred at a point in time or over time and it requires judgments.

- Determining the transaction price

The Group considers if significant benefits of financing is provided to the customer or the Group in relation to the advance payment from customers and reflects the effects of the time value of money to the transaction price. As a practical expedient, the Group need not adjust the promised amount of consideration for the effects of a significant financing component if the entity expects, at contract inception, that the period between when the Group transfers a promised good or service to a customer and when the customer pays for that good or service will be one year or less.

- Identifying of performance obligations

The Group shall assess the goods or services promised in a contract with a customer and shall identify as a performance obligation each promise to transfer a good or service that is distinct to the customer. If partial change in an order is not distinct, within the context of the contract, the performance obligation is not separated.

(i) Nature and timing of satisfaction of performance obligations

The Group engages in the shipbuilding segment for building merchant ships and special vessels and manufacturing ships' digital control panel and the offshore, industrial plant and engineering segment for building and installing offshore oil and gas fields, and the engine machinery segment for manufacturing ships' engines.

The shipbuilding segment builds and sells ships of the order from the owner and takes at least one year from the date of the contract to the completion of the construction. Due to the nature of the order-made production industry being customized according to the terms presented to the customer, the Group itself has no alternative use, and if the contract is terminated for the customer or other party reasons, it can claim incurred costs and reasonably estimated profit for performance completed to date or claim insufficient amount after the Group resale the asset in accordance with the contractual process. Consequently, if the Group's performance does not create an asset with an alternative use to the Company and the Company has enforceable right to payment for performance completed to date. The Group recognizes revenue over time in accordance with K-IFRS No.1115.

If the performance obligation is satisfied over time, the timing of satisfaction of performance obligations depends on measuring the progress, to depict the Group's performance in transferring control of goods or services promised to a customer, towards complete satisfaction of that performance obligation. If the Group would not be able to reasonably measure its performance, it measures its performance only to the extent of the costs incurred.

As the shipbuilding segment provides design, raw material purchase, production, and trial run, it is difficult to obtain the information required to apply output methods may not be available to the Group without undue cost. Therefore, the Group determines the timing of satisfaction of performance obligations when the timing of costs incurred because input methods, that recognize revenue on the basis of the Group's inputs to the satisfaction of a performance obligation relative to the total expected inputs to the satisfaction of that performance obligation, can faithfully depict the Group's performance.

The offshore, industrial plant and engineering segment is similar process industry to the shipbuilding segment, but the required facility specifications are complicated and extensive depending on the installation area and the production conditions of crude oil or gas, so the construction period is long and the construction amount is large.

4. Significant Accounting Policies, Continued

(23) Revenue from contracts with customers, continued

(i) Nature and timing of satisfaction of performance obligations, continued

Due to the nature of the order-made production industry being customized according to the terms presented to the customer, the Group itself has no alternative use, and if the contract is terminated for the customer or other party reasons, it can claim incurred costs and reasonably estimated profit for performance completed to date. The Group recognizes revenue over time in accordance with K-IFRS No.1115.

If the performance obligation is satisfied over time, the timing of satisfaction of performance obligations depends on measuring the progress, to depict the Group's performance in transferring control of goods or services promised to a customer, towards complete satisfaction of that performance obligation. If the Group would not be able to reasonably measure its performance, it measures its performance only to the extent of the costs incurred. As the offshore, industrial plant and engineering segment provides design, raw material purchase, production, and trial run, it is difficult to obtain the information required to apply output methods may not be available to the Group without undue cost. Therefore, the Group determines the timing of satisfaction of performance obligations when the timing of costs incurred because input methods, that recognize revenue on the basis of the Group's inputs to the satisfaction of a performance obligation relative to the total expected inputs to the satisfaction of that performance obligation, can faithfully depict the Group's performance.

The engine machinery segment and ship's digital control business of the shipbuilding segment supplies the ship's propulsion/power generation engines and ship's digital control panel as its main products. For general contracts, revenues are recognized as being satisfied the performance obligation at a point in time, not as satisfied the performance obligation over time.

The timing of satisfaction of performance obligations is when the assets held by the Group are transferred to and controlled by the customer, and the Group determines the point in time by indictors of the transfer of control, that include right to payment, legal title, physical possession, transfer of the significant risks and rewards, and the customer's acceptance of an asset. Generally, exports are transferred under the same conditions as CIF and FOB, and domestic sales are determined to satisfy performance obligations when the Group transfers physical possession of the asset to the customer.

(ii) Significant payment terms

The shipbuilding segment collects by each stage of ship-building, and the timing of collection for general merchant ships is divided into Contract, Steel Cutting, Keel laying, Launching, Delivery, and in particular, the Heavy Tail payment plan, which collects most of the contract price at delivery of ships is a major collection term.

In accordance with the *"Rules on the advances and progress payments for the defense industry"*, advances and progress payments for the special vessels will be made only for funds planned to be spent within 180 days from the date of claim.

The offshore, industrial plant and engineering segment charges and collect by the progress of the construction, including the advance payment, amount of work completed, the achievement amount of milestone, and the reserve for performance, and the engine machinery segment collects separately by the advance, middle and balance payments in accordance with the payment terms as specified in the contract.

Depending on the payment terms, there may be a significant financing component that adjusts the promised amount of consideration for the effects of the time value of money, if the difference occurs between when the Group expects to transfer the promised goods or services to the customer and when the customer pays for those goods or services.

4. Significant Accounting Policies, Continued

(23) Revenue from contracts with customers, continued

(iii) Nature of warranty and the length of the warranty coverage period

The shipbuilding segment typically provides a warranty of 12 months or 24 months depending on type of ship. The engine machinery segment typically provides a warranty period of 24 months after delivery or 12 months after ship delivery. The offshore, industrial plant and engineering segment provides a separate warranty period based on the nature of each construction and the terms of the contract. Usually, after the warranty period granted, it will be converted to paid-in-AS. The provided warranty provides the customer with a service in addition to the assurance that the product complies with agreed-upon specifications.

(iv) How to determine the transaction price, estimating the variable consideration, input variables, information

In the shipbuilding and the offshore, industrial plant and engineering segment, a single performance obligation exists, so it is not necessary to estimate the stand-alone selling price to allocate the transaction price, but in the engine machinery segment, separate services such as installation and supervision exist within the contract.

When the Group allocates the transaction price on a stand-alone selling price basis and the stand-alone selling price does not exist in the market, the total contract amount is allocated to the distinct performance obligations by the expected cost plus a margin approach – the Group forecasts its expected costs of satisfying a performance obligation and then add on appropriate margin for that good or service.

The consideration receivable from customers may be variable by change order due to design changes and additional work caused by requests from owners of the shipbuilding and the offshore, industrial plant and engineering segment, and delayed compensation due to delay in delivery and fail to achieve specifications. In the case of change order, variable consideration is included in the transaction price only to the extent it is highly probable that a significant revenue reversal will not occur. In the case of delayed compensation, the Group recognizes revenue by deducting the estimated amount incurred by the contract terms from the contract price.

(24) Finance income and finance costs

The Group's finance income and finance costs include:

- interest income;
- interest expense;
- dividend income;
- the net gain or loss on financial assets at FVTPL;
- the foreign currency gain or loss on financial assets and liabilities;
- impairment losses (and reversals) on investments in debt securities carried at amortized cost;
- the fair value loss on contingent consideration classified as a financial liability;
- hedge ineffectiveness recognized in profit or loss; and
- the reclassification of net gains or losses previously recognized in other comprehensive income on cash flow hedges of interest rate risk and foreign currency risk for borrowings (See Note 24).

Interest income or expense is recognized using the effective interest method. Dividend income is recognized in profit or loss on the date on which the Group's right to receive payment is established.

The 'effective interest rate' is the rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial instrument to:

- the gross carrying amount of the financial asset; or
- the amortized cost of the financial liability.

4. Significant Accounting Policies, Continued

(24) Finance income and finance costs, continued

In calculating interest income and expense, the effective interest rate is applied to the gross carrying amount of the asset (when the asset is not credit-impaired) or to the amortized cost of the liability. However, for the financial assets that have become credit-impaired subsequent to initial recognition, interest income is calculated by applying the effective interest rate to the amortized cost of the financial asset. If the asset is no longer credit-impaired, then the calculation of interest income reverts to the gross basis.

(25) Income tax

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

The Group has determined that interest and penalties related to income taxes meet the definition of income taxes, and accounted for them under K-IFRS No. 1012 '*Income Taxes*'. If they do not meet the definition of income taxes, the Group has accounted for them under K-IFRS No. 1037 '*Provision, Contingent Liabilities and Contingent Assets*'.

(i) Current tax

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

Current tax assets and liabilities are offset only if certain criteria are met;
- there is a legally enforceable right to offset the recognized amount; and
- there is intends to settle on a net basis or the liability while simultaneously realizing the asset.

(ii) Deferred tax

The measurement of deferred tax liabilities and deferred tax assets reflects the tax consequences that would follow from the manner in which the Group expects, at the reporting date, to recover or settle the carrying amount of its assets and liabilities.

For additional temporary differences in subsidiaries, associates and joint ventures, the Group can control when the temporary difference expires and all recognise deferred tax liabilities except where it is likely that the temporary difference will not expire in the foreseeable future. The Group recognizes a deferred tax asset for all deductible temporary differences to the extent that it is probable that the temporary difference will reverse in the foreseeable future and taxable profit will be available against which the temporary difference can be utilized.

Deferred tax assets are recognized for unused tax losses, unused tax credits and deductible temporary differences to the extent that it is probable that future taxable profits will be available against which they can be used. Future taxable profits are determined based on the reversal of relevant taxable temporary differences. If the amount of taxable temporary differences is insufficient to recognize a deferred tax asset in full, then future taxable profits, adjusted for reversals of existing temporary differences and the business plans of the Group are considered.

Deferred tax assets are reviewed at each reporting date and are reduced to the extent that it is no longer probable that future taxable profits will be available against which they can be used.

4. Significant Accounting Policies, Continued

(25) Income tax, continued

(ii) Deferred tax, continued

Deferred tax assets and liabilities are measured at the tax rates that are expected to be applied to temporary differences when they reverse, using tax rates enacted or substantively enacted at the reporting date. The measurement of deferred tax liabilities and deferred tax assets reflects the tax consequences that would follow from the manner in which the Group expects, at the reporting date, to recover or settle the carrying amount of its assets and liabilities.

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

(26) Earnings (loss) per share

The Group presents basic earnings (loss) per share (EPS) data in the consolidated financial statements of comprehensive income (loss) for its ordinary shares. Basic EPS is calculated by dividing the profit or loss attributable to ordinary shareholders by weighted average number of ordinary shares outstanding during the period.

(27) Standards issued but not yet effective

A number of new standards are effective for annual reporting periods beginning after January 1, 2020 and earlier application is permitted. However, the Group has not early adopted the new or amended standards in preparing these consolidated financial statements.

(i) Interest Rate Benchmark Reform – Phase 2 (Amendments to K-IFRS No.1109 *'Financial Instruments'*, K-IFRS No.1039 *'Financial Instruments: Recognition and Measurement'*, K-IFRS No.1107 *'Financial Instruments: Disclosures'*, K-IFRS No.1104 *'Insurance Contracts'* and K-IFRS No.1116 *'Leases')*

The amendments introduce practical expedients including:

- to account for a change in the basis for determining the contractual cash flows of a financial asset or financial liability that is required by IBOR reform, the Group can update the effective interest rate of the financial asset of financial liability; and;
- the Group will not need to discontinue existing hedging relationships to apply the amendments to a hedging relationship.

These amendments are effective for annual reporting periods beginning after January 1, 2021 and, earlier application is permitted. These amendments are not expected to have a significant impact on the Group's consolidated financial statements.

(ii) Reference to the Conceptual Framework (Amendments to K-IFRS No.1103 *'Business Combinations')*

The definition of assets and liabilities to be recognized was amended to refer to the revised conceptual framework for financial reporting, but it added the exceptions to apply the Standards for liabilities and contingent liabilities within the scope of K-IFRS No.1037 *'Provisions, Contingent Liabilities and Contingent Assets'* and K-IFRIC Interpretation No.2121 *'Levies' and* clarified that contingent assets are not recognized at the acquisition date. These amendments are effective for annual reporting periods beginning after January 1, 2022, and earlier application is permitted. These amendments are not expected to have a significant impact on the Group's consolidated financial statements.

4. Significant Accounting Policies, Continued

(27) Standards issued but not yet effective, continued

(iii) Property, Plant and Equipment: Proceeds before Intended Use (Amendments to K-IFRS No. 1016 *'Property, Plant and Equipment'*)

The Group recognizes the proceeds from selling items, that may be produced while bringing an item of property, plant and equipment to the location and condition necessary for it to be capable of operating in the manner intended by management, and the cost of those items in profit or loss. Sales proceeds are no longer deducted from the cost of property, plant and equipment before its intended use. These amendments are effective for annual reporting periods beginning after January 1, 2022 and earlier application is permitted. The Group is evaluating the impact of the amendments on its consolidated financial statements.

(iv) Onerous Contracts – Cost of Fulfilling a Contract (Amendments to K-IFRS No. 1037 *'Provisions, Contingent Liabilities and Contingent Assets')*

The amendments specify which costs an entity includes in determining the cost of fulfilling a contract for the purpose of assessing whether the contract is onerous. The amendments clarify that the 'cost of fulfilling a contract' comprise both the incremental costs and an allocation of other direct costs.

These amendments are effective for annual reporting periods beginning after January 1, 2022 and earlier application is permitted. These amendments are not expected to have a significant impact on the Group's consolidated financial statements.

(v) Annual Improvements to K-IFRS Standards 2018-2020

These amendments are effective for annual reporting periods beginning after January 1, 2022 and earlier application is permitted. These amendments are not expected to have a significant impact on the Group's consolidated financial statements.

- K-IFRS No.1101 *'First time Adoption of International Financial Reporting Standards'* – subsidiary that becomes a first-time adopter of K-IFRS Standards;
- K-IFRS No.1109 *'Financial Instruments'* – fees paid for the purpose of performing the '10 percent test' for derecognition of financial liabilities;
- K-IFRS No.1116 *'Leases'* – lease incentive; and
- K-IFRS No.1041 *'Agriculture'* – fair value measurement

(vi) Classification of Liabilities as Current or Non-current (Amendments to K-IFRS No.1001 *'Presentation of Financial Statements')*

These amendments clarify that classification of liabilities as either current or non-current is based on the substantive rights and do not consider the possibility that exercise rights to extend settlement of liabilities or managements' expectation. The settlement of liabilities also includes transfer of the Group's own equity instruments but does not include the case of the settlement option recognized as equity in accordance with the definition of an equity instrument, separately from the compound financial instruments. These amendments are effective for annual reporting periods beginning after January 1, 2023 and with earlier application is permitted. The Group is reviewing the impact of the amendments on its consolidated financial statements.

5. Risk Management

The Group has exposure to the following risks arising from financial instruments:

- Credit risk;
- Liquidity risk; and
- Market risk

This note presents information about the Group's exposure to each of the above risks, the Group's risk management objectives, policies and processes for measuring and managing risk, and the Group's capital management. Further quantitative disclosures are included throughout these consolidated financial statements.

(1) Financial risk management

1) Risk management framework

The Board of Directors has overall responsibility for the establishment and oversight of the Group's risk management framework.

The Group's risk management policies are established to identify and analyze the risks faced by the Group, to set appropriate risk limits and controls, and to monitor risks and adherence to limits. Risk management policies and systems are reviewed regularly to reflect changes in market conditions and the Group's activities. The Group, through its training and management standards and procedures, aims to maintain a disciplined and constructive control environment in which all employees understand their roles and obligations.

The Group Audit Committee oversees how management monitors compliance with the Group's risk management policies and procedures, and reviews the adequacy of the risk management framework in relation to the risks faced by the Group. The Group Audit Committee is assisted in its oversight role by Internal Audit. Internal Audit undertakes both regular and ad hoc reviews of risk management controls and procedures, the results of which are reported to the Audit Committee.

2) Credit risk

Credit risk is the risk of financial loss to the Group if a customer or counterparty to a financial instrument fails to meet its contractual obligations, and arises principally from the Group's trade and other receivables from customers and investments.

(i) Trade and other receivables and contract assets

The Group's exposure to credit risk is influenced mainly by the individual characteristics of each customer. Most of the Group's customers are major and international ship's owner targeting global markets and the risk of bankruptcy in the country where they located does not have significant impact on credit risk.

The Group establishes credit limits for each customer and each new customer is analyzed quantitatively and qualitatively before determining whether to utilize third party guarantees, insurance or factoring as appropriate.

The Group evaluates the impairment loss separately for bonds with significant bond size and impaired credit, taking into account the insurance purchase and creditworthiness. Other than these bonds, the expected loss rate applied for collective evaluation is as follows:

(In percentage)	**Not delayed**	**Not more than a year**	**Not more than 2 years**	**Not more than 3 years**
Expected loss rate	0.55%	2~20%	27~45%	48~100%

5. Risk Management, Continued

(1) Financial risk management, continued

2) Credit risk, continued

(ii) Investments

The Group limits its exposure to credit risk by investing only in liquid securities and only with counterparties that have high credit ratings. Management actively monitors credit ratings and given that the Group only has invested in securities with high credit ratings, does not expect a significant risk that any counterparty fails to meet its obligations.

(iii) Guarantees

The Group provides financial guarantees to other related parties if necessary.

3) Liquidity risk

Liquidity risk is the risk that the Group will encounter difficulty in meeting the obligations associated with its financial liabilities that are settled by delivering cash or another financial asset. The Group's approach to managing liquidity is to ensure, as far as possible, that it will have sufficient liquidity to meet its liabilities when they are due, under both normal and stressed conditions, without incurring unacceptable losses or risking damage to the Group's reputation.

The Group has historically been able to satisfy its cash requirements from cash flow from operations and debt or equity financing. If the Group can not generate sufficient cash flow from operations to meet its capital requirements, the Group may rely on other financing activities, such as external borrowings and issuing bonds.

4) Market risk

Market risk is the risk that changes in market prices, such as foreign exchange rates, interest rates and equity prices will affect the Group's income or the value of its holdings of financial instruments. The objective of market risk management is to manage and control market risk exposures within acceptable parameters, while optimizing the return.

The Group buys and sells derivatives, and also incurs financial liabilities to manage market risks. All such transactions are carried out within the guidelines set by the Group. Generally, the Group seeks to apply hedge accounting in order to manage volatility in profit or loss.

(i) Currency risk

The Group is exposed to currency risk on sales, purchases and borrowings that are denominated in a currency other than the functional currency of the Group, Korean won (KRW). The currencies in which these transactions primarily are denominated are USD, EUR, CNY, JPY and others.

The Group hedges trade receivables and trade payables denominated in a foreign currency in respect of forecasted sales and purchases. The Group uses forward exchange contracts to hedge its currency risk, most with a maturity of less than two years from the reporting date. When necessary, forward exchange contracts are rolled over at maturity. Trade receivables denominated in a foreign currency have been hedged using forward contracts that mature on the same dates that the receivables are due for collection. In respect of other monetary assets and liabilities denominated in foreign currencies, the Group ensures that its net exposure is kept to an acceptable level by buying or selling foreign currencies at spot rates when necessary to address short-term imbalances.

5. Risk Management, Continued

(1) Financial risk management, continued

4) Market risk, continued

(ii) Interest rate risk

The Group hedges interest rate risk using interest rate swap for variable interest borrowings. As a result, the risk that changes in the value of variable interest-bearing bonds and loans will affect the Group's profit or loss is avoided.

(iii) Other market price risk

The Group is exposed to price risk arising from equity instruments.

(2) Capital management

The management's policy is to maintain a strong capital base so as to maintain investor, creditor and market confidence and to sustain future development of the business. The Group monitors the liability to equity ratio and net borrowing to equity ratio, which the Group defines as total liabilities divided by total equity and net borrowing divided by total equity.

The Group's liability to equity ratio and net borrowing to equity ratio as of December 31, 2020 and 2019 are as follows:

(In millions of won, except equity ratio)		**2020**	**2019**
Total liabilities	₩	8,438,873	8,246,551
Total equity		5,360,785	5,622,907
Cash and deposits(*1)		1,869,037	1,181,820
Borrowings(*2)		4,546,687	3,902,399
Liability to equity ratio		157.42%	146.66%
Net borrowing to equity ratio(*3)		49.95%	48.38%

(*1) Cash and deposits consist of cash and cash equivalents and short-term and long-term financial instruments.
(*2) Discount on bonds is deducted from the face value of bonds.
(*3) Net borrowing represents borrowings net of cash and deposits.

The interest coverage ratio and basis of calculation for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won, except interest coverage ratio)		**2020**	**2019**
1. Operating income	₩	32,509	129,480
2. Interest expenses		155,574	80,219
3. Interest coverage ratio (1÷2)		0.21	1.61

6. Cash and Cash Equivalents

Cash and cash equivalents as of December 31, 2020 and 2019 are summarized as follows:

(In millions of won)		2020	2019
Cash	₩	135	258
Current deposit		4,311	10,706
Ordinary deposit		3,244	3,847
MMDA and others		1,307,133	978,822
	₩	1,314,823	993,633

7. Short-term and Long-term Financial Assets

Short-term and long-term financial assets as of December 31, 2020 and 2019 are summarized as follows:

(In millions of won)		2020		2019	
		Current	Non-current	Current	Non-current
Financial instruments	₩	554,200	14	188,173	14
Financial assets measured at FVTPL		-	7,808	380,997	7,808
Financial assets measured at FVOCI		-	1,738	-	1,738
	₩	554,200	9,560	569,170	9,560

8. Restricted Financial Instruments

Financial instruments, which are restricted in use, as of December 31, 2020 and 2019 are summarized as follows:

(In millions of won)

Description		2020	2019	Restrictions
Long-term financial instruments	₩	14	14	Guarantee deposits for checking accounts

The Group has deposited ₩124,200 million in financial institutions to provide financial support to the Group's partners as of December 31, 2020.

9. Trade and Other Receivables and Contract assets

(1) Trade and other receivables as of December 31, 2020 and 2019 are summarized as follows:

(In millions of won)		2020		2019	
		Current	Non-current	Current	Non-current
Trade receivables:					
Trade receivables	₩	1,343,794	182,389	1,703,484	231,176
Allowance for doubtful accounts		(589,566)	(136,277)	(541,720)	(187,838)
		754,228	46,112	1,161,764	43,338
Other receivables:					
Other accounts receivables		292,506	3,877	307,582	-
Allowance for doubtful accounts		(162,900)	-	(159,415)	-
Accrued income		4,118	-	4,670	-
Loans		169,353	986	150,137	14,376
Allowance for doubtful accounts		(165,510)	(292)	(150,137)	(11,221)
Guarantee deposits		258	2,301	667	2,492
		137,825	6,872	153,504	5,647
	₩	892,053	52,984	1,315,268	48,985

(2) Contract assets as of December 31, 2020 and 2019 are summarized as follows:

(In millions of won)		2020	2019
Contract assets	₩	2,624,966	2,548,128

(3) Changes in allowance for doubtful accounts in respect of trade and other receivables and contact assets for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)		2020	2019
Beginning balance	₩	1,050,331	1,032,927
Impairment loss recognized		20,511	22,741
Reversal of allowance for doubtful accounts		(10,725)	(5,337)
Write-off		(5,572)	-
Ending balance	₩	1,054,545	1,050,331

10. Inventories

Inventories as of December 31, 2020 and 2019 are summarized as follows:

(In millions of won)		2020			2019		
		Acquisition cost	**Provision for inventory valuation**	**Carrying amount**	**Acquisition cost**	**Provision for inventory valuation**	**Carrying amount**
Merchandise	₩	43	-	43	362	(31)	331
Work-in-progress(*)		343,678	(16,880)	326,798	331,349	(24,562)	306,787
Raw materials		332,973	(11,857)	321,116	329,526	(9,360)	320,166
Supplies		14,813	-	14,813	13,467	-	13,467
Materials-in-transit		116,217	-	116,217	175,751	-	175,751
	₩	807,724	(28,737)	778,987	850,455	(33,953)	816,502

(*) Provision for inventory valuation was decreased by ₩206 million for the period ended December 31, 2020, as the Group has transferred ship's digital control business to Hyundai Global Service Co., Ltd. which is other related party included in large-scale corporate conglomerate (See Note 43).

The reversals of write-down of inventories to net realizable value amounting to ₩5,010 million and ₩5,600 million are deducted from cost of sales for the periods ended December 31, 2020 and 2019, respectively.

11. Other Current Assets and Other Non-current Assets

Other current assets and other non-current assets as of December 31, 2020 and 2019 are summarized as follows:

(In millions of won)		2020		2019	
		Current	**Non-current**	**Current**	**Non-current**
Advance payments	₩	539,400	-	529,232	-
Prepaid expenses		111,379	801	134,838	834
Accumulated impairment loss(*1)		(33,702)	-	(9,286)	-
Others(*2)		212,864	-	212,496	-
Accumulated impairment loss		(158,464)	-	(119,872)	-
Defined benefit assets		-	29,956	-	-
	₩	671,477	30,757	747,408	834

(*1) Prior to recognition of the provision for the onerous contract, the impairment loss on the related asset was recognized.
(*2) The Group has acquired vessels under construction due to cancellation of a shipbuilding contracts and recognized it at fair value based on appraisal done by independent appraisal institution.

12. Investment in Associate

The Group purchased shares of KC LNG Tech Co., Ltd. from Korea Shipbuilding & Offshore Engineering Co., Ltd., the ultimate parent company of the Group (See Note 42).

(1) Investment in associate as of December 31, 2020 is summarized as follows:

(In millions of won, except percentage of ownership)

				2020		
Company	**Location**	**Fiscal year end**	**Main business**	**Ownership (%)**	**Carrying amount**	
KC LNG Tech Co., Ltd.(*)	Korea	December	Other engineering services	16.60	₩	946

(*)Although ownership is less than 20%, the Group includes the entity securities as investments in associate since the Group has a significant influence on main operating and financial policy decisions.

12. Investment in Associate, Continued

(2) Condensed financial information of associate as of and for the period ended December 31, 2020 is summarized as follows:

(In millions of won)		2020										
		Condensed financial information of associate										
Associate		**Current assets**	**Non-Current assets**	**Current liabilities**	**Non-Current liabilities**	**Equity**	**Sales(*)**	**Operating loss(*)**	**Loss for the period(*)**	**Other comprehensive income(*)**	**Total comprehensive loss(*)**	**Dividends received from investment in associate**
KC LNG Tech Co., Ltd.	₩	2,390	9,434	17,035	1,402	(6,613)	867	(4,112)	(17,894)	-	(17,894)	-

(*) Profit and loss for the period from January 1, 2020 to December 31, 2020, prior to acquisition date.

12. Investment in Associate, Continued

(3) Changes in equity-method accounted investees for the period ended December 31, 2020 are summarized as follows:

(In millions of won)

Associate		2020 Beginning balance	Acquisition (disposal)	Share of profit (loss) of equity accounted investees	Changes in equity of equity accounted investees	Dividends received	Ending balance
KC LNG Tech Co., Ltd.	₩	-	946	-	-	-	946

(4) Reconciliation from net assets of the associate to the carrying amount of investment in associate in the Group's consolidated financial statements as of December 31, 2020 is summarized as follows:

(In millions of won)

Associate		2020 Ending net assets	Percentage of the Group's ownership	Net value	Others	Ending carrying amount
KC LNG Tech Co., Ltd.	₩	(6,613)	16.60%	(1,098)	2,044	946

13. Joint Operation

The joint operations as of December 31, 2020 and 2019 are summarized as follows:

Joint operation	Location	Main business	2020 Ownership (%)	2019 Ownership (%)
FDH JV (*1)	Kuwait	Chemical plant	33.33	33.33
FDH JV (*2)	Kuwait	Chemical plant	20.00	20.00

(*1) The Group holds a significant joint operation 'FDH JV' as of December 31, 2020 and 2019. FDH JV is a joint operation that the main purpose of arrangement is construction of Clean Fuels Project MAB2 EPC PKG ordered by Kuwait National Petroleum Company. The Group recognizes the assets and liabilities relating to its interest in a joint operation and recognizes revenues and expenses relating to its interest in a joint operation.

(*2) The Group holds a significant joint operation 'FDH JV' as of December 31, 2020 and 2019. FDH JV is a joint operation that the main purpose of arrangement is construction of Al Zour Refinery Project Package 2 & 3 EPC PKG ordered by Kuwait Integrated Petroleum Industries Company. The Group recognizes the assets and liabilities relating to its interest in a joint operation and recognizes revenues and expenses relating to its interest in a joint operation.

14. Financial Assets measured at fair value

(1) Financial assets measured at FVOCI as of December 31, 2020 and 2019 are summarized as follows:

(In millions of won)		2020	2019
		Non-current	Non-current
Unlisted equity securities:			
Korea Defense Industry Association(*)	₩	1,738	1,738

(*) Unless otherwise noted, the carrying amounts of unlisted equity securities were recorded at their acquisition cost since their fair values cannot be reliably estimated.

(2) Financial assets measured at FVTPL as of December 31, 2020 and 2019 are summarized as follows:

(In millions of won)		2020	2019	
		Non-current	Current	Non-current
Beneficiary certificates	₩	-	380,997	-
Investments in capital(*):				
Machinery Financial Cooperative		4,998	-	4,998
Construction Guarantee Cooperative		2,539	-	2,539
Busan Marine Equipment Association		230	-	230
Fire Guarantee		20	-	20
Korea Marine Equipment Association		21	-	21
	₩	7,808	380,997	7,808

(*) Unless otherwise noted, the carrying amounts of Investments in capital were recorded at their acquisition cost since their fair values cannot be reliably estimated.

Changes at the end of the current year compared to the prior year are attributed to acquisition and disposal.

15. Investment Property

(1) Changes in investment property for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)		2020		
		Land	**Buildings**	**Total**
Beginning balance	₩	476	3,976	4,452
Acquisition and other		-	17	17
Depreciation		-	(162)	(162)
Ending balance	₩	476	3,831	4,307
Acquisition cost		476	7,761	8,237
Accumulated depreciation		-	(3,930)	(3,930)

(In millions of won)		2019		
		Land	**Buildings**	**Total**
Beginning balance	₩	470	4,025	4,495
Acquisition and other		6	46	52
Depreciation		-	(95)	(95)
Ending balance	₩	476	3,976	4,452
Acquisition cost		476	7,744	8,220
Accumulated depreciation		-	(3,768)	(3,768)

(2) Revenue and expense from investment property for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)		**2020**	**2019**
Rental income	₩	58	156
Operating and maintenance expense arising from investment property that generated rental income		181	114

(3) Fair values from investment property as of December 31, 2020 and 2019 are as follows:

(In millions of won)		2020		2019	
		Book value	**Fair value**	**Book value**	**Fair value**
Land	₩	476	827	476	799
Buildings		3,831	7,530	3,976	7,620
	₩	4,307	8,357	4,452	8,419

The fair value of investment property was determined by external, independent appraiser, having appropriate recognized professional qualifications and experience in relation to the assessment of real estate in the Republic of Korea. The valuation is achieved by using comparison methods to obtain the economic value based on marketability of the property. The Group calculated fair value considering changes in the standard market price such as individual Publicly assessed land price after previous evaluation date in order to estimate the fair value of investment property as of December 31, 2020.

16. Property, Plant and Equipment

(1) Changes in property, plant and equipment for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)

		2020						
		Land	Buildings	Structures	Machinery and equipment	Construction in-progress	Others	Total
Beginning balance	₩	2,945,750	1,163,095	932,806	576,864	69,035	409,986	6,097,536
Acquisitions and others(*1)		28,340	17,691	14,179	85,503	17	75,986	221,716
Disposals		(503)	(924)	(31)	(5,649)	-	(4,449)	(11,556)
Business transfer(*2)		-	-	-	-	-	(180)	(180)
Depreciation		-	(40,193)	(31,623)	(91,710)	-	(75,683)	(239,209)
Land revaluation		174,117	-	-	-	-	-	174,117
Impairment		-	(47,598)	(71,648)	(58,806)	-	(44,066)	(222,118)
Ending balance	₩	3,147,704	1,092,071	843,683	506,202	69,052	361,594	6,020,306
Acquisition cost		3,147,704	1,885,082	1,508,031	2,884,413	69,052	1,757,362	11,251,644
Accumulated depreciation		-	(733,969)	(553,501)	(2,288,391)	-	(1,317,181)	(4,893,042)
Accumulated impairment		-	(59,042)	(110,847)	(89,820)	-	(78,587)	(338,296)

(*1) The amount of expenditures related to the acquisition of construction in-progress is ₩37,889 million and the amount of reclassification, after the acquisition is completed, is ₩37,872 million for the period ended December 31, 2020.
(*2) It is a change as the Group has transferred ship's digital control business to Hyundai Global Service Co., Ltd. which is other related party included in large-scale corporate conglomerate for the period ended December 31, 2020 (See Note 43).

(In millions of won)

		2019						
		Land	Buildings	Structures	Machinery and equipment	Construction in-progress	Others	Total
Beginning balance	₩	2,925,035	1,170,356	947,007	595,416	59,379	434,519	6,131,712
Acquisitions and others(*1)		33,641	17,493	13,293	43,399	9,656	47,108	164,590
Disposals		-	-	-	(2,996)	-	(2,612)	(5,608)
Business acquisition(*2)		-	-	-	-	-	77	77
Depreciation		-	(23,471)	(18,535)	(55,185)	-	(44,674)	(141,865)
Impairment(*3)		(12,926)	(1,283)	(8,959)	(3,770)	-	(24,432)	(51,370)
Ending balance	₩	2,945,750	1,163,095	932,806	576,864	69,035	409,986	6,097,536
Acquisition cost		2,945,750	1,868,856	1,493,890	2,854,248	69,035	1,727,857	10,959,636
Accumulated depreciation		-	(694,318)	(521,885)	(2,246,343)	-	(1,282,853)	(4,745,399)
Accumulated impairment		-	(11,443)	(39,199)	(31,041)	-	(35,018)	(116,701)

(*1) The amount of expenditures related to the acquisition of construction in-progress is ₩34,107 million and the amount of reclassification, after the acquisition is completed, is ₩24,451 million for the period ended December 31, 2019.
(*2) It is a change as the Group has acquired ship's digital control business by transfer from Hyundai Electric & Energy Systems Co., Ltd. which is other related party included in large-scale corporate conglomerate for the period ended December 31, 2019 (See Note 45).
(*3) Land impairment loss is comprised of loss on revaluation and reduction in the revaluation surplus.

16. Property, Plant and Equipment, Continued

(2) Construction-in-progress is related to the construction of abyss engineering tank and others as of December 31, 2020.

(3) Impairment losses

The Group reevaluated impairment loss caused by machinery and other devices not in use at Gunsan shipyard, and an impairment loss was recognized in the amount of ₩8,536 million for buildings and ₩32,747 million for other property, plant and equipment. Reflecting the physical and technological obsolescence of assets, the Group estimated the recoverable amount of the assets at Gunsan shipyard based on valuation methods, including the cost approach. On the other hand, the management judged that it is unable to predict the re-operation plan of the Gunsan shipyard based on the medium-term business plan as of December 31, 2020.

The Group evaluated impairment loss for CGU which has an indication of impairment caused by decrease in production and market recession, so that an impairment loss was recognized in the amount of ₩112,885 million related to offshore business for property, plant and equipment for the period ended December 31, 2020. The estimated recoverable amount by impairment testing is fair value less costs to sell of the individual assets, which is expected negotiated sales amount or appraised value. Appraised value corresponds to fair value, which is evaluated based on valuation methods, such as “publicly assessed land price”, “sales comparison approach”, and others.

In addition, the Group evaluated impairment loss caused by damage of typhoon and others, and an impairment loss was recognized in the amount of ₩67,950 million for property, plant and equipment.

Based on the input variables used in valuation methods, the fair value measurements of Gunsan shipyard assets and machinery without plans for use are classified as Level 3 fair value. The valuation methods and input variables used in measuring fair values are as follows:

Valuation method	Significant but unobservable input variables	Correlation between the main unobservable variable and fair value
Publicly assessed land price	Time adjustment (Rate of changes in land value)	If flexibility of land value increases (decreases), then fair value increases (decreases).
	Regional contribution	If regional contribution increases (decreases), then fair value increases (decreases).
	Individual contribution	If the adjusted value of terms of residential lot and others increases (decreases), then fair value increases (decreases).
	Other contributions	If the adjusted value of the level of land value and others increases (decreases), then fair value increases (decreases).
Cost method	Changes in prices of raw materials, other materials, wages, and others	If the prices of raw materials and others increases (decreases), then fair value increases (decreases).
	Status of maintenance, management and others	If the status of maintenance, management and others is good (bad), then fair value increases (decreases).
Sales comparison approach	Sales comparisons of the object same or similar value formation factors with the target object	The price of target object is calculated through the process of information normalization, time adjustment, and value formation factors comparison according to the status of the target object.

16. Property, Plant and Equipment, Continued

(3) Impairment losses, continued

The Group tests for goodwill impairment on CGU annually. The Group, in principle, defines the business unit as CGU, and determines whether it is impaired by evaluating the value in use of the independent CGU. The recoverable amount of each business unit is reasonably estimated by the Group, and is derived through DCF (Discounted Cash Flow) using estimated cash flow before tax based on the five-year business plan approved by the management.

The discount rate and permanent growth rate, which are used when testing for impairment on CGU were calculated by taking into account the market environment such as COVID-19, and applying the average value of the long-term observation period (Applied discount rate 8.01%~9.19%, Permanent growth rate 1%).

(4) Land revaluation

The Group applied revaluation model on land and for the period ended December 31,2020 the Group revalued land by using the value which independent and expertise appraisal institution appraised on December 31, 2020. The appraisal institution valued land price based on the publicly assessed land price with adjustments and reviewed reasonableness of revaluation amount by comparing appraised results with the estimated price based on recent market transactions among the independent third parties.

As a result of revaluation on land, gain on revaluation amounting to ₩138,065 million (net of tax effects) was recognized as other comprehensive income and loss on revaluation amounting to ₩13,983 million was recognized as other non-operating expenses for the period ended December 31, 2020.

Book values of land assessed by revaluation model and cost model as of December 31, 2020 are as follows:

(In millions of won)		2020	
		Revaluation model	**Cost model**
Land	₩	3,147,704	1,958,966

As a result of revaluation on land, accumulated gain on revaluation amounted to ₩875,950 million (net of tax effects) was recognized as other comprehensive income and accumulated loss on revaluation amounted to ₩28,411 million in relation to land the Group holds as of December 31, 2020 was recognized as other non-operating expenses. In addition, due to partial disposal of the revalued land, gain on revaluation amounting to ₩233 million was reclassified to retained earnings for the period ended December 31, 2020.

16. Property, Plant and Equipment, Continued

(4) Land revaluation, continued

Based on the input variables used in the valuation method, the fair value measurement of land is classified as level 3 fair value based on the input variables used in the valuation techniques. The valuation method and input variables used in measuring fair value of land are as follows:

Valuation method	Significant but unobservable input variables	Correlation between the main unobservable variable and fair value
Publicly assessed land price	Time adjustment (Rate of changes in land value)	If flexibility of land value increases (decreases), then fair value increases (decreases).
	Regional contribution	If regional contribution increases (decreases), then fair value increases (decreases).
	Individual contribution	If the adjusted value of terms of residential lot and others increases (decreases), then fair value increases (decreases).
	Other contributions	If the adjusted value of the level of land value and others increases (decreases), then fair value increases (decreases).

(5) Temporarily idle property, plant and equipment

The carrying amounts of temporarily idle property, plant and equipment in the Gunsan shipyard and offshore business are ₩810,187 million and ₩906,544 million as of December 31, 2020 and 2019, respectively.

(6) Property, plant and equipment completed of depreciation but in use

The carrying amounts of the property, plant and equipment completed of depreciation but in use are ₩115 million and ₩105 million as of December 31, 2020 and 2019, respectively.

17. Right-of-use Assets

(1) Changes in right-of-use assets for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)		2020			
		Land	Buildings	Others	Total
Beginning balance	₩	2,950	4,568	1,085	8,603
Additions and adjustment		11,774	5,099	688	17,561
Derecognition and others		(171)	(100)	(9)	(280)
Depreciation		(2,855)	(6,335)	(1,099)	(10,289)
Ending balance	₩	11,698	3,232	665	15,595
Acquisition cost		15,287	13,160	2,406	30,853
Accumulated depreciation		(3,589)	(9,928)	(1,741)	(15,258)

17. Right-of-use Assets, Continued

(1) Changes in right-of-use assets for the periods ended December 31, 2020 and 2019 are as follows, continued:

(In millions of won)		2019			
		Land	**Buildings**	**Others**	**Total**
Beginning balance	₩	2,602	4,617	977	8,196
Additions and adjustment		894	2,280	505	3,679
Derecognition and others		-	(42)	-	(42)
Depreciation		(546)	(2,287)	(397)	(3,230)
Ending balance	₩	2,950	4,568	1,085	8,603
Acquisition cost		3,780	8,177	1,729	13,686
Accumulated depreciation		(830)	(3,609)	(644)	(5,083)

(2) Expenses recognized in profit or loss related to leases for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)		**2020**	**2019**
Depreciation on right-of-use assets(*):			
Lands	₩	2,855	546
Buildings		6,335	2,287
Others		1,099	397
	₩	10,289	3,230
Interest expense on lease liabilities	₩	339	161
Short-term lease payment(*)		16,536	43,190
Payments for leases of low-value assets not short-term lease(*)		105	44
Variable lease payments not included in the measurement of the lease liabilities(*)		550	325

(*) Included in cost of sales and selling, general and administrative expenses.

The total cash outflows related to leases for the periods ended December 31, 2020 and 2019 are amounting to ₩27,024 million and ₩46,073 million.

18. Intangible Assets

(1) Changes in development costs for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)		2020	2019
Beginning balance	₩	23,800	25,590
Acquisition and others		8,879	3,960
Amortization		(2,509)	(4,893)
Impairment(*)		-	(857)
Ending balance	₩	30,170	23,800
Acquisition cost		428,426	419,547
Accumulated amortization		(383,720)	(381,211)
Accumulated impairment		(14,536)	(14,536)

(*) Impairment loss was recognized for the period ended December 31, 2019, as it was determined that the recovery of the development costs related to the container ship structure was not probable.

(2) Other intangible assets include patent, usable and profitable donation assets to Maritime Affairs & Port Office and intangible assets with indefinite useful lives. Changes in other intangible assets for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)		2020	2019
Beginning balance	₩	33,990	32,660
Acquisition and others		982	1,413
Disposals and others		(38)	-
Amortization		(142)	(83)
Ending balance(*)	₩	34,792	33,990
Acquisition cost		39,420	38,476
Accumulated amortization		(3,338)	(3,196)
Accumulated impairment		(1,290)	(1,290)

(*) The carrying amounts of the intangible assets with indefinite useful lives are ₩31,504 million and ₩31,530 million as of December 31, 2020 and 2019, respectively.

(3) Details of research and development costs and ordinary development costs and development cost amortization included in intangible asset for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)			2020	2019
Research and development costs	Selling, general and administrative expenses	₩	4,151	4,851
Ordinary development costs	Selling, general and administrative expenses		67,749	39,665
Development cost amortization	Manufacturing costs		2,004	3,410
	Selling, general and administrative expenses		-	615
	Others		505	868
		₩	2,509	4,893

18. Intangible Assets, Continued

(4) Changes in goodwill for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)		2020	2019
Beginning balance	₩	455	-
Business acquisition(*1)		-	455
Business transfer(*2)		(455)	-
Ending balance	₩	-	455
Acquisition cost		-	455

(*1) It is a change as the Group has acquired ship's digital control business by transfer from Hyundai Electric & Energy Systems Co., Ltd. which is other related party included in large-scale corporate conglomerate for the period ended December 31, 2019 (See Note 45).
(*2) It is a change as the Group has transferred ship's digital control business to Hyundai Global Service Co., Ltd. which is other related party included in large-scale corporate conglomerate for the period ended December 31, 2020 (See Note 43).

19. Short-term and Long-term Financial Liabilities and Lease Liabilities

(1) Short-term and long-term financial liabilities and lease liabilities as of December 31, 2020 and 2019 are summarized as follows:

(In millions of won)		2020		2019	
		Current	Non-current	Current	Non-current
Borrowings	₩	2,397,344	1,787,186	2,020,449	1,510,172
Bonds		110,000	252,320	-	372,092
Discount on bonds		(75)	(88)	-	(314)
	₩	2,507,269	2,039,418	2,020,449	1,881,950
Lease liabilities		7,731	8,612	5,409	3,244

(2) Details of the timing of the cash outflow the lease liabilities under contract as of December 31, 2020 and 2019 are as follows:

(In millions of won)		2020					
		Carrying amount	Contractual cashflow(*)	6 months more or less	6~12 months	1~3 years	More than 3 years
Lease liabilities	₩	16,343	18,216	5,472	2,644	3,735	6,365

(*) Undiscounted lease payments

(In millions of won)		2019					
		Carrying amount	Contractual cashflow(*)	6 months more or less	6~12 months	1~3 years	More than 3 years
Lease liabilities	₩	8,653	8,941	2,276	3,230	3,307	128

(*) Undiscounted lease payments

20. Trade and Other Payables

Trade and other payables as of December 31, 2020 and 2019 are summarized as follows:

(In millions of won)		2020		2019	
		Current	**Non-current**	**Current**	**Non-current**
Trade payables	₩	947,104	-	1,040,204	-
Other accounts payable		191,835	-	189,002	-
Accrued expenses		506,709	-	450,383	-
Deposits received		-	212	-	215
	₩	1,645,648	212	1,679,589	215

21. Borrowings and Bonds

(1) Short-term borrowings as of December 31, 2020 and 2019 are as follows:

(In millions of won)

Type of borrowing	Lender	Annual Interest rate (%)		2020	2019
General loan	Standard Chartered Bank Korea Limited and others	2.26~3.10	₩	190,000	420,000
General loan in foreign currency	FDH JV ZOR	2.50		9,673	11,254
Invoice loan	Industrial & Commercial Bank of China and others	0.75~2.02		9,248	51,074
Usance L/C	Industrial Bank of Korea and others	0.20~2.54		450,626	420,069
Pre-shipment credit	Export-Import Bank of Korea	2.51~2.54		102,248	600,000
Other borrowings	Export-Import Bank of Korea	-		-	218,052
				761,795	1,720,449
Current portion of long-term borrowings				1,635,549	300,000
			₩	2,397,344	2,020,449

(2) Long-term borrowings as of December 31, 2020 and 2019 are as follows:

(In millions of won)

Type of borrowing	Lender	Annual interest rate (%)		2020	2019
General loan	The Korea Development Bank and others	2.27~3.84	₩	2,097,000	798,000
General loan in foreign currency	SABB and others	1.84~3.04		717,983	792,172
Commercial Paper	Korea Investment & Securities Co., Ltd. and others	3.30~3.41		250,000	220,000
Pre-shipment credit	Export-Import Bank of Korea	2.55~2.64		357,752	-
				3,422,735	1,810,172
Current portion of long-term borrowings				(1,635,549)	(300,000)
			₩	1,787,186	1,510,172

21. Borrowings and Bonds, Continued

(3) Bonds as of December 31, 2020 and 2019 are as follows:

(In millions of won)

Description	Issue	Maturity	Annual interest rate (%)		2020	2019	Guarantee(*)
2nd debenture	2019.02.25	2021.11.25	3.90	₩	110,000	110,000	Debenture
3rd debenture	2019.05.29	2022.02.28	3.75		100,000	100,000	Debenture
Floating rate bond	2019.12.12	2022.12.12	1.19		152,320	162,092	Secured bond
					362,320	372,092	
Discount on bonds					(163)	(314)	
Current portion of bonds					(110,000)	-	
Current portion of discount on bonds					75	-	
				₩	252,232	371,778	

(*) The Group is provided with guarantees from financial institution issued for floating rate bond.

(4) Aggregate maturities of the Group's borrowings and bonds as of December 31, 2020 and 2019 are as follows:

(In millions of won)

		2020		
Periods		Borrowings	Bonds	Total
2021.01.01 ~ 2021.12.31	₩	2,397,344	110,000	2,507,344
2022.01.01 ~ 2025.12.31		1,787,186	252,320	2,039,506
	₩	4,184,530	362,320	4,546,850

(In millions of won)

		2019		
Periods		Borrowings	Bonds	Total
2020.01.01 ~ 2020.12.31	₩	2,020,449	-	2,020,449
2021.01.01 ~ 2024.12.31		1,510,172	372,092	1,882,264
	₩	3,530,621	372,092	3,902,713

21. Borrowings and Bonds, Continued

(5) Changes in liabilities arising from financing cash flows for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)			2020			
			Borrowings	**Bonds**	**Lease liabilities**	**Total**
Beginning balance		₩	3,530,621	371,778	8,653	3,911,052
Cash flows from financing activities	Borrowing		4,511,355	-	-	4,511,355
	Repayment		(3,771,638)	-	(9,561)	(3,781,199)
Non-cash flows	The effects of changes in foreign exchange rates		(85,808)	(9,772)	(111)	(95,691)
	Amortization of bond discounts		-	151	-	151
	Others		-	-	17,634	17,634
Cash flows from operating activities(*)			-	-	(272)	(272)
Ending balance		₩	4,184,530	362,157	16,343	4,563,030

(*) Interest expense among the reduction of lease liabilities for the period ended December 31, 2020, is classified as cash flows from operating activities.

(In millions of won)			2019			
			Borrowings	**Bonds**	**Lease liabilities**	**Total**
Beginning balance		₩	3,010,279	274,577	7,262	3,292,118
Cash flows from financing activities	Borrowing		2,536,554	167,062	-	2,703,616
	Repayment		(1,984,069)	(65,000)	(2,393)	(2,051,462)
Non-cash flows	The effects of changes in foreign exchange rates		(32,143)	(4,970)	-	(37,113)
	Amortization of bond discounts		-	109	-	109
	Others		-	-	3,905	3,905
Cash flows from operating activities(*)			-	-	(121)	(121)
Ending balance		₩	3,530,621	371,778	8,653	3,911,052

(*) Interest expense among the reduction of lease liabilities for the period ended December 31, 2019, is classified as cash flows from operating activities.

22. Employee Benefits

(1) Recognized liabilities for defined benefit obligations as of ended December 31, 2020 and 2019 are as follows:

(In millions of won)		2020	2019
Present value of defined benefit obligations	₩	693,107	734,667
Other long-term benefits		36,325	36,546
		729,432	771,213
Fair value of plan assets(*)		(693,107)	(699,487)
Liabilities recognized under defined benefit plans	₩	36,325	71,726

(*) The fair value of plan assets amounting to ₩29,956 million, exceeding the present value of defined benefit obligations, is recognized as defined benefit assets and the fair value of plan assets including excess reserve is ₩723,063 million as of December 31, 2020 (See Note 11).

(2) Plan assets as of December 31, 2020 and 2019 are as follows:

(In millions of won)		2020	2019
Retirement pension(*)	₩	721,717	697,733
Transfer to National Pension Fund		1,346	1,754
	₩	723,063	699,487

(*) The retirement pension is invested in principal and interest guaranteed instruments and funds with bonds mixed as of December 31, 2020.

(3) Expenses recognized in profit or loss for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)		2020	2019
Current service costs	₩	72,981	43,919
Interest on obligations		15,848	9,021
Expected return on plan assets		(15,439)	(7,542)
	₩	73,390	45,398

For the periods ended December 31, 2020 and 2019, amounting to ₩23,916 million and ₩2,887 million were incurred, respectively, as additional retirement benefits.

22. Employee Benefits, Continued

(4) Changes in the defined benefit obligations for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)		2020	2019
Beginning balance	₩	771,213	768,277
Current service costs		72,981	43,919
Interest cost		15,848	9,021
Benefits paid		(85,135)	(55,946)
Transfers from (to) related parties		(626)	3,603
Actuarial gains and losses in other comprehensive loss (income)		(43,785)	1,624
Business acquisition(*1)		-	715
Business transfer(*2)		(1,064)	-
Ending balance	₩	729,432	771,213

(*1) It is a change as the Group has acquired ship's digital control business by transfer from Hyundai Electric & Energy Systems Co., Ltd. which is the other related party included in a large-scale corporate conglomerate for the period ended December 31, 2019 (See Note 45).
(*2) It is a change as the Group has transferred ship's digital control business to Hyundai Global Service Co., Ltd. which is other related party included in a large-scale corporate conglomerate for the period ended December 31, 2020 (See Note 43).

(5) Changes in the fair value of plan assets for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)		2020	2019
Beginning balance	₩	699,487	600,540
Benefits paid		(77,440)	(52,946)
Contributions paid into the plan		85,000	149,100
Expected return on plan assets		15,439	7,542
Transfers from related parties		2,061	-
Actuarial gains and losses in other comprehensive loss		(1,484)	(4,749)
Ending balance	₩	723,063	699,487

The Group reviews the level of the fund each year and takes the policy to preserve fund in the event of a loss to the fund. The Group expects to pay ₩64,554 million and ₩71,490 million in contributions to its defined benefit plans in next year, as of December 31, 2020 and 2019, respectively.

(6) Expected payment date of the defined benefit obligations as of December 31, 2020 is as follows:

(In millions of won)		2021.01.01 ~ 2021.12.31	2022.01.01 ~ 2025.12.31	2026.01.01 ~ 2030.12.31	2031.01.01 ~	Total
Expected payment	₩	27,259	242,623	254,161	1,428,177	1,952,220

22. Employee Benefits, Continued

(7) Principal actuarial assumptions as of December 31, 2020 and 2019 are as follows:

(In percentage)	**2020**	**2019**
Discount rate	2.29	2.25
Future salary growth	1.64	2.08
Future mortality (Males, at age 45)	0.20	0.20

(8) Weighted average durations of the defined benefit obligations as of December 31, 2020 and 2019 are as follows:

(In years)	**2020**	**2019**
Weighted average duration	10.54	10.53

(9) Reasonably possible changes as of December 31, 2020 and 2019 to each relevant actuarial assumption would have affected the defined benefit obligation by the amounts shown below.

(In millions of won)		**2020**		**2019**	
		Increase	**Decrease**	**Increase**	**Decrease**
Discount rate (1% movement)	₩	(62,429)	77,888	(67,842)	80,570
Future salary growth (1% movement)		67,792	(55,418)	69,448	(60,064)

23. Provisions

(1) Changes in provisions for the period ended December 31, 2020 are as follows:

(In millions of won)		**2020**				
		Provision for construction losses	**Provision for construction warranty**	**Provision for product warranty**	**Other provision(*1)**	**Total**
Beginning balance	₩	160,194	405,834	59,997	35,979	662,004
Additions		101,282	22,183	36,755	6,926	167,146
Reversals		(123,510)	(30,411)	(1,505)	(30,187)	(185,613)
Utilization		-	(42,138)	(16,599)	-	(58,737)
Others(*2)		(24,416)	-	-	-	(24,416)
Business transfer(*3)		(150)	-	(1,358)	-	(1,508)
Ending balance		113,400	355,468	77,290	12,718	558,876
Current		113,400	95,548	62,002	12,718	283,668
Non-current	₩	-	259,920	15,288	-	275,208

(*1) Other provisions are recognized as constructive obligations that are surety insuring only performing construction and expected arbitration expenses.

(*2) For the period ended December 31, 2020, this is the effect of changes in impairment losses previously recognized for assets related to onerous contracts.

(*3) It is a change as the Group has transferred ship's digital control business to Hyundai Global Service Co., Ltd. which is other related party included in a large-scale corporate conglomerate for the period ended December 31, 2020 (See Note 43).

23. Provisions, Continued

(2) Changes in provisions for the period ended December 31, 2019 are as follows:

(In millions of won)		2019				
		Provision for construction losses	**Provision for construction warranty**	**Provision for product warranty**	**Other provision(*1)**	**Total**
Beginning balance	₩	339,094	455,773	45,712	22,848	863,427
Additions		18,025	36,865	23,319	16,218	94,427
Reversals		(202,544)	(25,808)	(739)	(3,087)	(232,178)
Business acquisition(*3)		683	-	2,158	-	2,841
Utilization		-	(60,996)	(10,453)	-	(71,449)
Others(*2)		4,936	-	-	-	4,936
Ending balance	₩	160,194	405,834	59,997	35,979	662,004
Current		160,194	149,293	38,501	35,979	383,967
Non-current		-	256,541	21,496	-	278,037

(*1) Other provisions are recognized as constructive obligations that are surety insuring only performing construction and expected arbitration expenses.
(*2) For the period ended December 31, 2019, this is the effect of changes in impairment losses previously recognized for assets related to onerous contracts.
(*3) It is a change as the Group has acquired ship's digital control business from Hyundai Electric & Energy Systems Co., Ltd. which is other related party included in a large-scale corporate conglomerate for the period ended December 31, 2019 (See Note 45).

24. Derivative Financial Instruments

The Group has entered into derivative instrument contracts related to foreign currency forwards with KEB Hana Bank and other 16 banks for hedge the changes in foreign exchange rates. Derivatives are measured at fair values by using forward exchange rates presented by the contract counterparty. The details of assessment and gains or losses of transaction for the period ended December 31, 2020 are as follows:

(1) The description of derivative instrument and hedge accounting is as follows:

Hedge accounting	Type	Description
Fair value hedge	Foreign exchange forward contracts	Hedge of the risk of changes in the fair value of firm commitments
Cash flow hedge	Foreign exchange forward contracts	Hedge of the variability in cash flows attributable to foreign currency exposure in respect of forecast purchases
	Foreign exchange swap contracts	Hedge of the variability in cash flows attributable to foreign currency liabilities in respect of interest rate and exchange rate

24. Derivative Financial Instruments, Continued

(2) Terms of derivative contracts as of December 31, 2020 are as follows:

(In millions of won and in thousands of foreign currency)

Description	Type	Currency Sell	Currency Buy	Contract amount	Weighted average exchange rate (In won)	Average maturities	Number of contracts
Fair value hedge	Foreign exchange forward contracts	USD	KRW	3,781,272 ₩	1,146.64	2021-08-09	1,421
		EUR	KRW	28,318	1,419.53	2021-12-10	8
Cash flow hedge	Foreign exchange forward contracts	USD	EUR	793	0.78	2021-01-29	1
		KRW	GBP	5,493	1,490.70	2022-06-03	7
	Foreign exchange swap contracts	KRW	USD	662,378	1,143.22	2022-04-10	8

- Terms of settlement: Netting the settlement or collecting total
- The contract amount is denominated in selling currency

(3) Book values related to derivatives as of December 31, 2020 are as follows:

(In millions of won)

		Derivatives				Firm commitment			
		Assets		Liabilities		Assets		Liabilities	
Description	Type	Current	Non-current	Current	Non-current	Current	Non-current	Current	Non-current
Fair value hedge	Foreign exchange forward contracts	₩ 155,059	68,410	1,614	5	3,047	4	110,636	66,484
Cash flow hedge	Foreign exchange forward contracts	-	72	81	18	-	-	-	-
	Foreign exchange swap contracts	1,561	-	11,080	24,598	-	-	-	-
		₩ 156,620	68,482	12,775	24,621	3,047	4	110,636	66,484

24. Derivative Financial Instruments, Continued

(4) Gains and losses on the valuation and transaction of derivatives for the period ended December 31, 2020 are as follows:

(In millions of won)

Description	Type		Sales	Cost of sales	Finance income	Finance costs	Other non-operating income	Other non-operating expenses	Other comprehensive income (before tax)
Fair value hedge	Foreign exchange forward contracts	₩	(126,431)	-	357,870	134,012	73,351	241,887	-
Cash flow hedge	Foreign exchange forward contracts		-	(119)	-	-	-	-	65
	Foreign exchange swap contracts		-	-	-	46,879	-	-	267
For trading	Foreign exchange forward contracts		-	-	5,251	593	-	-	-
		₩	(126,431)	(119)	363,121	181,484	73,351	241,887	332

For the period ended December 31, 2020, the Group applies cash flow hedge accounting, for which the Group accounted the effective portion of the hedge amounting to ₩244 million, net of tax of ₩88 million, as a gain on valuation of derivatives in accumulated other comprehensive income.

The maximum expected period of exposure to cash flow risk, where the cash flow hedge accounting is applied, is approximately 32 months as of December 31, 2020.

25. Common stock and Capital Surplus

(1) Common stock

The Parent company is authorized to issue 160,000,000 shares of common stock (par value ₩5,000), and as of December 31, 2020, the number of common stocks issued is 70,773,116 shares.

(2) Capital surplus

(i) Paid-in capitals in excess of par value as of December 31, 2020 and 2019 are as follows:

(In millions of won)		2020	2019
Paid-in capital in excess of par value by split-off in June, 2019	₩	4,641,671	4,641,671
Establishment costs of corporation in June, 2019		(1,729)	(1,729)
	₩	4,639,942	4,639,942

25. Common stock and Capital Surplus, Continued

(2) Capital surplus, continued

(ii) Changes in the capital surplus for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)		2020	2019
Beginning balance	₩	4,639,942	4,641,671
Establishment costs of corporation		-	(1,729)
Ending balance	₩	4,639,942	4,639,942

(3) Dividends

The Group has no dividends paid for the periods ended December 31, 2020 and 2019.

26. Capital adjustments

(1) Capital adjustments as of December 31, 2020 and 2019 are as follows:

(In millions of won)		2020	2019
Repayment of hybrid bonds	₩	(1,411)	(1,411)

(2) Changes in capital adjustments for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)		2020	2019
Beginning balance	₩	(1,411)	-
Repayment of hybrid bonds		-	(1,411)
Ending balance	₩	(1,411)	(1,411)

(3) Changes in hybrid bonds for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)		2020	2019
Beginning balance	₩	-	428,589
Repayment of hybrid bonds in December, 2019		-	(428,589)
Ending balance	₩	-	-

26. Capital adjustments, Continued

(4) Terms and conditions of the hybrid bonds were as follows:

(In millions of won)

	1st -1 Hybrid bond	1st -2 Hybrid bond
Amount issued	₩ 360,000	₩ 70,000
Maturity	30 years (At maturity, it can be extended in accordance with the Group's decision)	
Interest rate	Issue date ~ 2019-12-15 : Fixed rate 4.90% Re-calculated and applied every 5 years, 5-year treasury bond yield + annual 2.55%+ annual 2.00% (Step-up clauses)	Issue date ~ 2019-12-15 : Fixed rate 4.80% Re-calculated and applied every 5 years, 5-year treasury bond yield + annual 2.45% + annual 2.00% (Step-up clauses)
Interest payment condition	3 months deferred payment, selective payment postpone is possible	
Other	Depending on the Group's choice, the Group can redeem at the date 5th anniversary after issuance and every interest payment thereafter.	

The Group has an unconditional option to extend the maturity of hybrid bonds at maturity. Also, payment of interest on bonds can be postponed by the discretion of the Group. If a payment of interest is postponed, the Group cannot pay any dividend of common stock until the deferred interest is paid in full. The Group classifies hybrid bonds as equity because the Parent company holds unconditional rights to avoid contractual obligation to deliver cash or other financial assets to the holder.

The Parent company repaid all amount of hybrid bonds by exercising the early redemption option during the period ended December 31, 2019.

27. Accumulated Other Comprehensive Income

(1) Accumulated other comprehensive income as of December 31, 2020 and 2019 are summarized as follows:

(In millions of won)		2020	2019
Changes in fair value of financial assets measured at FVOCI	₩	(459)	(459)
Effective portion of changes in fair value of cash flow hedges		(1,983)	(2,227)
Translation differences related to foreign operation		(35)	-
Revaluation of property, plant and equipment		875,950	738,118
	₩	873,473	735,432

27. Accumulated Other Comprehensive Income, Continued

(2) Other comprehensive income (loss) for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)		2020		
		Before tax amount	**Tax effect**	**After tax amount**
Effective portion of changes in fair value of cash flow hedges	₩	332	(88)	244
Translation differences related to foreign operation		(35)	-	(35)
Actuarial gains and losses		42,301	(11,252)	31,049
Revaluation of property, plant and equipment		188,100	(50,035)	138,065
	₩	230,698	(61,375)	169,323

(In millions of won)		2019		
		Before tax amount	**Tax effect**	**After tax amount**
Changes in fair value of financial assets measured at FVOCI	₩	(625)	166	(459)
Effective portion of changes in fair value of cash flow hedges		1,931	(514)	1,417
Actuarial gains and losses		(6,373)	1,696	(4,677)
Revaluation of property, plant and equipment		(2,494)	663	(1,831)
	₩	(7,561)	2,011	(5,550)

28. Accumulated deficit

(1) Accumulated deficits as of December 31, 2020 and 2019 are as follows:

(In millions of won)		2020	2019
Unappropriated deficit	₩	(505,085)	(104,922)

(2) Changes in deficit for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)		2020	2019
Beginning balance	₩	(104,922)	-
Loss for the period		(431,446)	(88,945)
Actuarial gains and losses		31,049	(4,678)
Reclassification of revaluation surplus		234	-
Interest for hybrid bonds		-	(11,299)
Ending balance	₩	(505,085)	(104,922)

29. Revenue

(1) Sales for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)		2020	2019
Construction contracts	₩	6,624,883	4,527,325
Goods sold		1,529,137	838,142
Services		157,990	91,201
	₩	8,312,010	5,456,668

(2) Changes in outstanding contracts for the period ended December 31, 2020 are as follows:

(In millions of won)		Shipbuilding	Offshore, Industrial Plant and Engineering	Others	Total
Beginning balance(*1)	₩	11,324,502	1,006,600	2,248,414	14,579,516
Increase during the year(*2)		4,945,818	380,638	1,156,664	6,483,120
Sales recognized		(5,877,136)	(896,688)	(1,538,186)	(8,312,010)
Ending balance	₩	10,393,184	490,550	1,866,892	12,750,626

(*1) The beginning balance includes than impact from changes in exchange rate and the beginning balance of canceled contracts is excluded.
(*2) The increase includes the impact from changes in the contract amount.

As of December 31, 2020, the Group provides certain amount of financial institution guarantee deposits or letters of guarantee from various financial institutions to the customers for bidding, performance, advance payment and warranty guarantees in connection with above construction contracts.

29. Revenue, Continued

(2) Changes in outstanding contracts for the period ended December 31, 2020 are as follows, continued:

Periods when the ending balance is expected to be recognized as revenues are as follows:

(In millions of won)		2021	2022	After 2023	Total
Expected amount	₩	7,414,785	3,946,257	1,389,584	12,750,626

(3) Accumulated revenues and costs of construction and others related to construction in progress as of December 31, 2020 are as follows:

(In millions of won)		Accumulated revenue of construction	Accumulated cost of construction	Accumulated Profit (loss) of construction	Billed receivables on construction contracts	Unbilled receivables on construction contracts	Contract liabilities	Provision for construction losses
Shipbuilding	₩	6,230,450	6,071,122	159,328	309	2,475,354	931,228	70,292
Offshore, Industrial Plant and Engineering(*)		7,420,139	8,262,963	(842,824)	385,310	149,612	42,684	18,598
	₩	13,650,589	14,334,085	(683,496)	385,619	2,624,966	973,912	88,890

(*) The accumulated revenue and cost of construction related to joint operation (FDH JV) is not included.

Among the receivables on construction contracts, the amount of retentions in accordance with the contract terms is amounting to ₩223,104 million.

Heavy-tail payment plan is a major collection term in the Shipbuilding segment, and Offshore, Industrial Plant and Engineering segment mainly based on Progress and Milestone payment plan. Therefore, billed receivables on construction contracts and contract assets might be changed according to the progress of construction.

29. Revenue, Continued

(4) As of December 31, 2020, the information about significant construction contracts is as follows:

(In millions of won)

	Contract	Contract date	Contract due(*1)	Progress		Contract asset Total	Contract asset Allowance for doubtful accounts	Trade receivable Total	Trade receivable Allowance for doubtful accounts
Offshore, Industrial Plant and Engineering	SHUQAIQ	2013.08.04	2018.05.31	99.6%	₩	-	-	225,691	-
	CFP	2014.04.13	2018.10.18	99.9%		74,745	-	19,526	-
	ZOR	2015.10.13	2019.07.27	87.5%		6,054	-	108,819	-
	King's Quay FPS Project	2018.10.08	2021.08.30	81.0%		7,396	-	8,982	-
	Contract 1-327 MSC	2016.07.25	2020.07.08	100.0%		-	-	-	-
	NASR 2	2014.07.08					(*2)		

(*1) For the project the construction deadline that has elapsed, some remaining works are in a progress after delivering the object or a consultation with the client to extent the construction period is still under negotiation.
(*2) As there are contractual confidentiality obligations and the clients disagree with disclosing this information, the Group omits the related disclosures after reporting it to audit committee. As of December 31, 2020, the Group omitted the related disclosures for seven contracts. However, the date of contracts of NASR 2 are disclosed in securities registration statement, business report, investment prospectus, or important management matters, the Group has disclosed the related information.

(5) The effect of changes in estimated total contract costs

(i) Effect of changes in total contract costs

For the period ended December 31, 2020, the estimated total contract costs and total contract revenue for contracts in progress as of December 31, 2019 have changed. Effects on profit or loss for the current period and the future period, the impact on contract assets and contract liabilities are as follows:

(In millions of won)

		Change of total contract revenue(*1)	Change of total estimated contract cost	Effect on profit or loss of contract: Current period	Effect on profit or loss of contract: Future period	Effect on profit or loss of contract: Total	Change of contract assets	Change of contract liabilities
Shipbuilding	₩	(311,655)	(509,724)	254,043	(55,974)	198,069	145,473	(5,434)
Offshore, Industrial Plant and Engineering(*2)		67,204	11,038	55,138	1,028	56,166	31,953	46,115
	₩	(244,451)	(498,686)	309,181	(54,946)	254,235	177,426	40,681

(*1) Changes in entire contract revenue (including foreign currency fluctuation) are reflected because it is unable to distinguish total contract revenue changed directly by changes in total contract costs.
(*2) The accumulated revenue and cost of construction related to joint operation (FDH JV) is not included.

Effects on profit or loss for the current period and future period is calculated based on the total contract cost and total contract revenue estimated on the basis of situations generated in current period, and these estimations could be changed by variation of situations in the future.

29. Revenue, Continued

(5) The effect of changes in estimated total contract costs, continued

(ii) Sensitivity analysis of changes in estimated total contract costs

The amount of contract assets and contract liabilities affected by progress which is determined by accumulated cost incurred divided by estimated total contract cost. An estimated total contract cost is calculated based on an estimated material cost, labor cost and construction period, and has a variance risk related to exchange rate fluctuations, changes in steel prices and changes in production hours.

The Group has entered foreign currency forward contracts to hedge the risk related to exchange rate fluctuations, and hedges the risk related to changes of steel price in short period of time by entering steel purchase agreement by period. The risk and uncertainty related to production hours has been managed by department which is responsible for managing production hours. Effects on profit or loss of current period and future periods, contract assets and contract liabilities in case production hour changes 10% are as follows:

(In millions of won)

		Effect of profit or loss in current period		Effect of profit or loss in future period		Changes of contract assets		Changes of contract liabilities	
		10% increase	10% decrease	10% increase	10% decrease	10% increase	10% decrease	10% increase	10% decrease
Shipbuilding	₩	(126,252)	88,068	(121,095)	159,280	(26,868)	27,423	9,804	(10,110)
Offshore, Industrial Plant and Engineering(*)		(4,080)	4,090	(390)	379	(3,317)	3,343	150	(157)
	₩	(130,332)	92,158	(121,485)	159,659	(30,185)	30,766	9,954	(10,267)

(*) The accumulated revenue and cost of construction related to joint operation (FDH JV) is not included.

(6) Source of revenue

(In millions of won)		2020	2019
Revenue from contracts with customers	₩	8,438,383	5,551,043
Investment property rentals		58	156
Hedging gains and losses		(126,431)	(94,531)
	₩	8,312,010	5,456,668

29. Revenue, Continued

(7) Disaggregation of revenue from contracts with customers

Disaggregation of revenue from contracts with customers for the periods ended December 31, 2020 and 2019 is as follows:

(In millions of won)		2020	2019
Major products/service lines			
Shipbuilding	₩	5,973,997	3,886,388
Offshore, Industrial Plant and Engineering		902,152	811,160
Engine and Machinery		1,496,890	808,627
Others		65,402	45,024
	₩	8,438,441	5,551,199
Primary geographical markets			
Korea	₩	3,743,984	1,729,736
North America		396,375	93,008
Asia		1,480,251	1,399,285
Europe		2,759,791	2,258,151
Others		58,040	71,019
	₩	8,438,441	5,551,199
Duration of contract			
Short-term contract	₩	525,482	358,578
Long-term contract		7,912,959	5,192,621
	₩	8,438,441	5,551,199
Timing of revenue recognition			
Goods and services transferred at a point in time	₩	1,710,510	954,361
Goods and services transferred over time		6,727,931	4,596,838
	₩	8,438,441	5,551,199

(8) Contract balance

The information about receivables, contract assets and contract liabilities from contracts with customers as of December 31, 2020 and 2019 is as follows:

(In millions of won)		2020	2019
Trade receivables	₩	1,526,183	1,934,660
Allowance for doubtful accounts		(725,843)	(729,558)
	₩	800,340	1,205,102
Contract assets		2,624,966	2,548,128
Allowance for doubtful accounts		-	-
	₩	2,624,966	2,548,128
Contract liabilities(*)	₩	(1,420,267)	(1,712,982)

(*) The amount of ₩1,206,951 million included in contract liabilities (₩1,712,982 million) as of December 31, 2019 has been recognized as revenue for the period ended December 31, 2020.

29. Revenue, Continued

(9) Cost to fulfill a contract recognized as an asset

The Group pays commission fees in relation to the contract, in accordance with K-IFRS No.1115, which is the incremental costs of obtaining a contract are those costs that the Company incurs to obtain a contract with a customer that it would not have incurred if the contract had not been obtained. Commission fees that are expected to be recovered from the customers are recognized as costs to fulfill contract assets and amortized to reflect the progress of the construction.

(In millions of won)		2020	2019
Beginning balance	₩	93,218	60,459
Increase		27,930	64,834
Amortization(*)		(46,268)	(37,011)
Reversal		(24,416)	4,936
Ending balance	₩	50,464	93,218

(*) It is amortized in the same way that the controls over involved goods or services are transferred to the customer.

30. Operating Segments

The Group has the following four strategic divisions, which are its reportable segments. These strategic operating units offer different products and services and are managed separately because they require different technology and marketing strategies. The chief executive officer (CEO) reviews internal reports of each strategic operating unit at least quarterly.

(i) Shipbuilding: Manufacturing and sale of VLCCs, containerships, P/C ships, LNG carriers, warships, ship's control panel(*) and others
(ii) Offshore, Industrial Plant and Engineering: Manufacturing and installation of offshore facilities, floating units, co-generating power plants, and processing equipment
(iii) Engine and Machinery: Manufacturing and sale of engines for ships, diesel power plants, industrial and marine pumps and hydraulic machinery
(iv) Others: Operating performing arts center, leisure sports facilities and others.

(*) The Group has transferred ship's digital control business to Hyundai Global Service Co., Ltd., a related party included in a large-scale corporate conglomerate for the period ended December 31, 2020 (See Note 43).

(1) The financial performance of each reportable segment for the periods ended December 31, 2020 and 2019 is as follows:

(In millions of won)		2020				
		Sales	Intercompany sales	Operating Profit (loss)	Profit (Loss) for the period	Depreciation and amortization(*)
Shipbuilding	₩	5,877,136	-	175,523	(25,230)	123,316
Offshore and Industrial Plant Engineering		896,979	(291)	(97,681)	(290,283)	41,318
Engine and Machinery		1,472,784	-	131,883	92,826	52,751
Others		65,402	-	(177,216)	(208,759)	34,926
Consolidated adjustments		(291)	291	-	-	-
	₩	8,312,010	-	32,509	(431,446)	252,311

(*) Depreciation on the right-of-use assets for the period ended December 31, 2020 is included.

30. Operating Segments, Continued

(1) The financial performance of each reportable segment for the periods ended December 31, 2020 and 2019 is as follows, continued:

(In millions of won)	2019			
	Sales	**Operating profit (loss)**	**Profit (Loss) for the period**	**Depreciation and amortization(*)**
Shipbuilding	₩ 3,820,380	74,396	(23,629)	70,416
Offshore and Industrial Plant Engineering	808,025	118,675	41,156	26,192
Engine and Machinery	783,239	40,417	31,042	33,678
Others	45,024	(104,008)	(137,514)	19,880
	₩ 5,456,668	129,480	(88,945)	150,166

(*) Depreciation on the right-of-use assets for the period ended December 31, 2019 is included.

Consolidated adjustments are intercompany transactions within operating segments, the elimination of intercompany transactions and others.

(2) Assets and liabilities of each reportable segment as of December 31, 2020 and 2019 are as follows:

(In millions of won)	2020	
	Total assets	**Total liabilities**
Shipbuilding	₩ 2,343,593	2,368,849
Offshore and Industrial Plant Engineering	566,583	856,781
Engine and Machinery	928,045	835,214
Others	9,961,848	4,378,320
Consolidated adjustment	(411)	(291)
	₩ 13,799,658	8,438,873

(In millions of won)	2019	
	Total assets	**Total liabilities**
Shipbuilding	₩ 2,519,350	2,543,470
Offshore and Industrial Plant Engineering	1,241,065	1,199,910
Engine and Machinery	788,164	761,734
Others	9,315,843	3,741,437
Held for sale	5,037	-
	₩ 13,869,459	8,246,551

31. Selling, General and Administrative Expenses

Selling, general and administrative expenses for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)		2020	2019
Salaries	₩	81,834	49,662
Bonus		41,867	28,374
Post-employment benefit costs		32,690	9,163
Employee welfare		37,254	21,422
Depreciation		25,066	13,856
Amortization		-	615
Bad debt expenses		3,888	2,992
Ordinary development costs		67,749	39,665
Advertising		1,940	2,386
Printing		563	557
Power		1,475	766
Warranty expenses		14,368	22,384
Insurance		547	265
Office supplies		634	282
Supplies		1,083	629
Utilities		74	57
Repairs		1,578	996
Travel		2,073	3,025
Research		4,151	4,851
Training		725	2,486
Service contract expenses		55,756	30,946
Transportation		414	211
Freight		3,256	2,110
Ceremony expenses		151	361
Rent		1,767	2,389
Data processing		13,669	6,054
Entertainment		310	282
Taxes and dues		3,279	(828)
Service charges		33,793	35,059
Automobile maintenance		2,228	1,516
Sales commissions		1,770	1,255
Others		5,666	3,164
	₩	441,618	286,952

32. Nature of Expenses

The classifications of expenses by nature for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)		2020	2019
Changes in inventories	₩	20,534	(102,600)
Purchase of inventories		4,879,530	3,263,770
Depreciation		239,371	141,959
Depreciation on right-of-use assets		10,289	3,230
Amortization		2,651	4,976
Employee benefits		843,568	568,309
Others		2,283,558	1,447,543
	₩	8,279,501	5,327,187

Total expenses consist of cost of sales and selling, general and administrative expenses.

33. Finance Income and Finance Costs

Finance income and finance costs for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)		2020	2019
Finance income:			
Interest income	₩	30,348	26,703
Gain on valuation of financial instruments measured at FVTPL		-	368
Gain on disposal of financial instruments measured at FVTPL		5,251	3,186
Dividend income		34	-
Gain on foreign currency translation		110,363	44,829
Gain on foreign currency transactions		255,848	72,598
Gain on valuation of derivatives		297,341	119,209
Gain on derivatives transactions		60,529	23,551
Reversal of other provisions		2,466	3,087
	₩	762,180	293,531
Finance costs:			
Interest expense	₩	155,574	80,219
Loss on disposal of financial instruments measured at FVTPL		593	17,590
Loss on foreign currency translation		201,834	27,698
Loss on foreign currency transactions		234,772	91,602
Loss on valuation of derivatives		38,397	16,504
Loss on derivatives transactions		142,494	17,518
Other provision additions		6,926	11,343
	₩	780,590	262,474

34. Other Non-Operating Income and Other Non-operating Expenses

Other non-operating income and other non-operating expenses for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)		2020	2019
Other non-operating income:			
Gain on disposal of property, plant and equipment	₩	3,853	9,397
Gain on disposal of intangible assets		16	-
Gain on disposal of non-current assets held for sale		1,318	596
Gain on disposal of other current assets		-	14,112
Gain on valuation of firm commitments		73,351	10,065
Gain on disposal of right-of-use assets		5	-
Reversal of other allowance for doubtful accounts		4	62
Miscellaneous income		10,412	20,612
	₩	88,959	54,844
Other non-operating expenses:			
Other bad debt expenses	₩	5,902	14,475
Commissions		3,243	3,976
Warranty		1,281	327
Impairment loss on property, plant and equipment		222,118	38,444
Impairment loss on intangible assets		-	857
Impairment loss on other current assets		38,592	64,305
Loss on disposal of property, plant and equipment		8,141	2,651
Loss on revaluation of property, plant and equipment		13,983	10,432
Loss on disposal of non-current assets held for sale		506	679
Loss on valuation of firm commitments		241,887	120,825
Donation		3,077	240
Loss on disposal of right-of-use assets		21	-
Miscellaneous expenses		104,419	61,675
	₩	643,170	318,886

35. Income Tax Expense

(1) Components of income tax benefit for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)		2020	2019
Current tax expense	₩	341	4,058
Adjustment for prior periods		21,638	(14,459)
Origination and reversal of temporary differences		(69,271)	(6,169)
Income tax recognized directly in equity		(61,375)	2,011
Total income tax benefit	₩	(108,667)	(14,559)

35. Income Tax Expense, Continued

(2) Income taxes recognized directly other than profit or loss for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)		**2020**	**2019**
Changes in fair value of financial assets measured at FVOCI	₩	-	166
Effective portion of changes in fair value of cash flow hedges		(88)	(514)
Actuarial gains and losses		(11,252)	1,696
Revaluation of property, plant and equipment		(50,035)	663
	₩	(61,375)	2,011

Income taxes related to changes in fair value of financial assets measured at FVOCI, effective portion of changes in fair value of cash flow hedges, actuarial gains and losses and others are recognized as other comprehensive incomes.

(3) Reconciliations of the effective tax rates for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)		**2020**	**2019**
Loss before income tax	₩	(540,112)	(103,504)
Tax rate		26.60%	26.60%
Income tax using the Group's statutory tax rate		(143,670)	(27,532)
Adjustment for:			
- Tax effect of non-deductible expenses		3,867	7,867
- Tax effect of tax-exempt income		(1)	(3,006)
- Tax incentives		-	(65)
- Current adjustments for prior periods		21,638	(14,459)
- Others		9,499	22,636
Income tax benefit	₩	(108,667)	(14,559)
Effective tax rate		(*)	(*)

(*) As income tax benefit is occurred, the Group did not calculate the effective tax rate.

(4) Deferred tax assets and deferred tax effects by origination and reversal of temporary differences for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)		**2020**	**2019**
Deferred assets at the end of the year	₩	532,394	463,123
Deferred assets at the beginning of the year		463,123	456,954
Deferred tax effects by origination and reversal of temporary differences	₩	69,271	6,169

(5) As of December 31, 2020 and 2019, the tax effects of temporary difference were calculated by expected tax rate of the fiscal year when the temporary differences are expected to reverse.

(6) Deferred tax assets and liabilities are offset and presented in the consolidated statements of financial position, only if there are a legally enforceable right to offset the related current tax liabilities and assets, and they relate to income taxes levied by the same tax authority and they intend to settle current tax liabilities and assets on a net basis.

35. Income Tax Expense, Continued

(7) Changes in deferred tax assets (liabilities) for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)		2020		
		Beginning balance	**Change**	**Ending balance**
Allowance for doubtful accounts	₩	269,763	1,078	270,841
Defined benefit liabilities		154,034	11,982	166,016
Plan assets		(155,718)	(22,660)	(178,378)
Derivatives		4,026	(9,169)	(5,143)
Accrued expenses		20,211	(1,079)	19,132
Gains and losses on foreign exchange translations		(4,557)	32,119	27,562
Others		31,157	60,465	91,622
		318,916	72,736	391,652
Tax losses carried forward		121,856	53	121,909
Tax incentives carried forward		22,351	(3,518)	18,833
	₩	463,123	69,271	532,394

(In millions of won)		2019		
		Beginning balance	**Change**	**Ending balance**
Allowance for doubtful accounts	₩	264,091	5,672	269,763
Defined benefit liabilities		139,520	14,514	154,034
Plan assets		(115,315)	(40,403)	(155,718)
Derivatives		(3,547)	7,573	4,026
Accrued expenses		20,104	107	20,211
Gains and losses on foreign exchange translations		-	(4,557)	(4,557)
Others		111,237	(80,080)	31,157
		416,090	(97,174)	318,916
Tax losses carried forward		-	121,856	121,856
Tax incentives carried forward		40,864	(18,513)	22,351
	₩	456,954	6,169	463,123

(8) The Group judges that deferred tax assets are recoverable, because it is probable that future taxable profit will be available which the Group can use the unused tax losses and others.

36. Loss per share

(1) Basic loss per share for the periods ended December 31, 2020 and 2019 is as follows:

(In millions of won, In thousands of shares)		2020	2019
Loss for the period	₩	(431,446)	(88,945)
Interest for hybrid bonds		-	(11,299)
Weighted average number of ordinary shares outstanding(*)		70,773	70,773
Loss per share *(In won)*	₩	(6,096)	(1,416)

(*) The weighted average number of ordinary shares outstanding for the periods ended December 31, 2020 and 2019 are as follows:

(In shares)	2020		
	Number of shares outstanding	**Weighted average (In days)**	**Weighted average number of shares outstanding**
Beginning balance	70,773,116	366/366	70,773,116
Weighted average number of ordinary shares outstanding	70,773,116		70,773,116

(In shares)	2019		
	Number of shares outstanding	**Weighted average (In days)**	**Weighted average number of shares outstanding**
Beginning balance	70,773,116	214/214	70,773,116
Weighted average number of ordinary shares outstanding	70,773,116		70,773,116

(2) Since there are no diluted potential common shares for the periods ended December 31, 2020 and 2019, diluted earnings per share have not been calculated.

37. Cash Generated from Operations

(1) Cash generated from operations for the periods ended December 31, 2020 and 2019 is as follows:

(In millions of won)		2020	2019
Loss for the period	₩	(431,446)	(88,945)
Adjustments for:			
Post-employment benefit costs		73,390	45,398
Depreciation		239,371	141,960
Depreciation on right-of-use assets		10,289	3,230
Amortization		2,651	4,976
Bad debt expenses		3,888	2,992
Reversal of other allowance doubtful accounts (Other non-operating income)		(4)	(62)
Other bad debt expenses (Other non-operating expenses)		5,902	14,475
Finance income		(438,085)	(191,109)
Finance costs		395,805	124,425
Other non-operating income		(78,544)	(20,058)
Other non-operating expenses		525,248	238,193
Income tax revenue		(108,667)	(14,559)
Changes in assets and liabilities:			
Trade receivables		366,522	3,128
Other receivables		13,118	(55,615)
Contract assets		(235,716)	(826,464)
Inventories		20,534	(102,600)
Derivatives		26,077	(90,371)
Firm commitments		22,407	112,347
Other current assets		12,923	367,993
Other non-current assets		33	2
Trade payables		(85,972)	194,233
Other payables		70,790	49,722
Advances from customers		(866)	-
Contract liabilities		(302,785)	(108,532)
Retirement benefits paid		(85,135)	(55,946)
Succession of retirement benefits		(626)	3,603
Plan assets		(9,621)	(96,154)
Provisions		(83,724)	(213,522)

37. Cash Generated from Operations, Continued

(2) Significant transactions that do not involve cash inflows and outflows for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)		2020	2019
Reclassification of current portion of long-term borrowings	₩	1,858,112	200,000
Change in advances from customers related to the other current assets		-	(212,420)
Reclassification of construction-in-progress		24,097	9,904
Reclassification of current portion of long-term loans		14,986	38,724
Change in other payables related to acquisition of property, plant and equipment		(4,534)	6,926
Reclassification of property, plant and equipment to non-current assets held for sale		-	1,735
Increase in right-of-use assets and lease liabilities		16,944	3,678
Revaluation of property, plant and equipment		188,100	-

38. Categories of Financial Instruments and Income and Costs by Categories

(1) Categories of financial instruments as of December 31, 2020 and 2019 are summarized as follows:

(In millions of won)		2020			
		Fair value-hedging instruments	Financial instruments measured at FVTPL	Equity investments measured at FVOCI	Financial instruments measured at amortized cost
Cash and cash equivalents	₩	-	-	-	1,314,823
Short-term financial assets		-	-	-	554,200
Trade and other receivables		-	-	-	892,053
Contract assets		-	-	-	2,624,966
Derivative assets (current)		156,620	-	-	-
Long-term financial assets		-	7,808	1,738	14
Long-term trade and other receivables		-	-	-	52,984
Derivative assets (non-current)		68,482	-	-	-
	₩	225,102	7,808	1,738	5,439,040
Short-term financial liabilities	₩	-	-	-	2,507,269
Lease liabilities (current)		-	-	-	7,731
Trade and other payables		-	-	-	1,645,648
Other provision (current)		-	-	-	12,718
Derivative liabilities (current)		12,775	-	-	-
Long-term financial liabilities		-	-	-	2,039,418
Lease liabilities (non-current)		-	-	-	8,612
Long-term trade and other payables		-	-	-	212
Derivative liabilities (non-current)		24,621	-	-	-
	₩	37,396	-	-	6,221,608

38. Categories of Financial Instruments and Income and Costs by Categories, Continued

(1) Categories of financial instruments as of December 31, 2020 and 2019 are summarized as follows, continued:

(In millions of won)		2019			
		Fair value-hedging instruments	Financial instruments measured at FVTPL	Equity investments measured at FVOCI	Financial instruments measured at amortized cost
Cash and cash equivalents	₩	-	-	-	993,633
Short-term financial assets		-	380,997	-	188,173
Trade and other receivables		-	-	-	1,315,268
Contract assets		-	-	-	2,548,128
Derivative assets (current)		34,585	-	-	-
Long-term financial assets		-	7,808	1,738	14
Long-term trade and other receivables		-	-	-	48,985
Derivative assets (non-current)		59,665	-	-	-
	₩	94,250	388,805	1,738	5,094,201
Short-term financial liabilities	₩	-	-	-	2,020,449
Lease liabilities (current)		-	-	-	5,409
Trade and other payables		-	-	-	1,679,589
Other provision (current)		-	-	-	8,257
Derivative liabilities (current)		102,357	-	-	-
Long-term financial liabilities		-	-	-	1,881,950
Lease liabilities (non-current)		-	-	-	3,244
Long-term trade and other payables		-	-	-	215
Derivative liabilities (non-current)		37,386	-	-	-
	₩	139,743	-	-	5,599,113

38. Categories of Financial Instruments and Income and Costs by Categories, Continued

(2) Financial instruments income and costs by categories for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)

		2020				
		Net income (loss)	Other comprehensive income	Interest Income /expense(*)	Dividend income	Impairment loss
Fair value-hedging instruments	₩	(117,870)	244	-	-	-
Financial instruments measured at FVTPL		4,691	-	-	34	-
Financial instruments measured at amortized cost		(208,690)	-	(106,820)	-	(9,786)

(*) Interest income and expense arising from effective interest rate amortization are included.

(In millions of won)

		2019			
		Net loss	Other comprehensive income (loss)	Interest income/expense(*)	Impairment loss
Fair value-hedging instruments	₩	(97,626)	1,417	-	-
Financial instruments measured at FVTPL		(14,036)	-	-	-
Financial instruments measured at FVOCI		-	(459)	-	-
Financial instruments measured at amortized cost		(109,983)	-	(41,740)	(17,404)

(*) Interest income and expense arising from effective interest rate amortization are included.

39. Risk of Financial Instruments

(1) Credit risk

1) Exposure to credit risk

The carrying amount of financial assets and contract assets represents the maximum credit exposure. The maximum exposure to credit risk as of December 31, 2020 and 2019 are as follows:

(In millions of won)		2020	2019
Cash and cash equivalents(*1)	₩	1,314,688	993,375
Fair value-hedging instruments		225,102	94,250
Financial instruments measured at FVTPL		7,808	388,805
Financial instruments measured at amortized cost(*2)		4,124,217	4,100,569
	₩	5,671,815	5,576,999

(*1) Cash held as of December 31, 2020 and 2019 is excluded.
(*2) The carrying amounts of contract assets as of December 31, 2020 and 2019 are included.

The maximum exposure to credit risk for financial guarantee contracts is ₩104,735 million and ₩124,856 million as of December 31, 2020 and 2019 (See Note 40).

The maximum exposure to credit risk for financial instruments measured at amortized cost (including contract assets) by geographic region as of December 31, 2020 and 2019 is as follows:

(In millions of won)		2020	2019
Korea	₩	1,552,082	843,290
North America		20,784	17,622
Asia		1,026,744	1,625,671
Europe		1,515,331	1,576,323
Others		9,276	37,663
	₩	4,124,217	4,100,569

2) Impairment loss

(i) Impairment loss on trade and other receivables and contract assets for the periods ended December 31, 2020 and 2019 is as follows:

(In millions of won)		2020	2019
Impairment loss on trade and other receivables and contract assets	₩	9,786	17,404

39. Risk of Financial Instruments, Continued

(1) Credit risk, continued

2) Impairment loss, continued

(ii) The aging of trade and other receivables and contract assets and the amount of impairment in each aging as of December 31, 2020 and 2019 are as follows:

(In millions of won)		2020		2019	
		Gross	**Impairment**	**Gross**	**Impairment**
Not past due	₩	3,866,671	(349,643)	4,195,733	(365,708)
0~6 months past due		29,558	(5,935)	38,697	(5,669)
6~12 months past due		6,383	(5,590)	15,929	(6,771)
1~3 years past due		65,302	(42,212)	92,157	(52,243)
More than three years past due		656,634	(651,165)	620,196	(619,940)
	₩	4,624,548	(1,054,545)	4,962,712	(1,050,331)

(iii) Changes in the allowance for doubtful account in respect of trade and other receivables and contract assets for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)		2020	2019
Beginning balance	₩	1,050,331	1,032,927
Impairment loss recognized		20,511	22,741
Reversal of allowance for doubtful accounts		(10,725)	(5,337)
Write-off		(5,572)	-
Ending balance	₩	1,054,545	1,050,331

The allowance for doubtful accounts in respect of trade and other receivables and contract assets are used to record impairment losses until the Group is certain that the amount of assets cannot recover. If the Group decides that the asset cannot be recovered, allowance for doubtful accounts will be removed and offset from the financial asset.

For the periods ended December 31, 2020 and 2019, impairment losses and reversal of allowance for doubtful accounts arising from in other receivables are recorded as other non-operating income (loss) and the details are as follows:

(In millions of won)		2020	2019
Other bad debt expenses	₩	5,902	14,475
Reversal of other allowance doubtful accounts		(4)	(62)
	₩	5,898	14,413

39. Risk of Financial Instruments, Continued

(1) Credit risk, continued

3) The analysis of the aging of financial assets that are past due as of December 31, 2020 and 2019, but not impaired is summarized as follows:

(In millions of won)		2020				
		Carrying amount	**6 months or less**	**6~12 months**	**1~3 years**	**More than 3 years**
Financial instruments measured at amortized cost	₩	52,975	23,623	793	23,090	5,469

(In millions of won)		2019				
		Carrying amount	**6 months or less**	**6~12 months**	**1~3 years**	**More than 3 years**
Financial instruments measured at amortized cost	₩	82,356	33,028	9,158	39,914	256

(2) Liquidity risk

1) The contractual maturities of financial liabilities, including contractual interest payments and excluding the impact of offsetting agreements as of December 31, 2020 are summarized as follows:

(In millions of won)		2020					
		Carrying amount	**Contractual cash flow**	**6 months or less**	**6~12 months**	**1~3 years**	**More than 3 years**
Non-derivative financial liabilities:							
Borrowings	₩	4,184,530	4,321,424	1,166,639	1,313,557	1,841,228	-
Bonds		362,157	374,895	4,921	114,921	255,053	-
Trade and other payables		1,645,860	1,645,860	1,645,648	-	212	-
Lease liabilities		16,343	18,216	5,472	2,644	3,735	6,365
Derivative financial liabilities:							
Forward exchange contracts used for hedging		1,718	1,740	1,621	95	24	-
	₩	6,210,608	6,362,135	2,824,301	1,431,217	2,100,252	6,365

As of December 31, 2020, the Group did not include payment guarantee contracts amounting to ₩12,718 million, which are recognized as financial liabilities, due to uncertain timing of expenditure. As of December 31, 2020, the maximum amount of guarantee that the Group may be obliged to cover in connection with financial guarantee contracts is ₩104,735 million, other than the financial guarantee contract (See Note 40).

It is not expected that the cash flows included in the maturity analysis could occur significantly earlier, or at significantly different amounts.

39. Risk of Financial Instruments, Continued

(2) Liquidity risk, continued

2) The contractual maturities of financial liabilities, including contractual interest payments and excluding the impact of offsetting agreements as of December 31, 2019 are summarized as follows:

(In millions of won)

		2019					
		Carrying amount	Contractual cash flow	6 months or less	6~12 months	1~3 years	More than 3 years
Non-derivative financial liabilities:							
Borrowings	₩	3,530,621	3,616,528	1,269,541	811,437	1,535,550	-
Bonds		371,778	401,928	5,172	6,358	390,398	-
Trade and other payables		1,679,804	1,679,804	1,679,589	-	215	-
Lease liabilities		8,653	8,941	2,276	3,230	3,307	128
Derivative financial liabilities:							
Forward exchange contracts used for hedging		136,093	140,184	61,754	42,590	35,840	-
	₩	5,726,949	5,847,385	3,018,332	863,615	1,965,310	128

As of December 31, 2019, the Group did not include payment guarantee contracts amounting to ₩8,257 million, which are recognized as financial liabilities, due to uncertain timing of expenditure. As of December 31, 2019, the maximum amount of guarantee that the Group may be obliged to cover in connection with financial guarantee contracts is ₩124,856 million, other than the financial guarantee contract.

It is not expected that the cash flows included in the maturity analysis could occur significantly earlier, or at significantly different amounts.

3) The periods in which the cash flows associated with cash flow hedges are expected to occur as of December 31, 2020 and 2019 are summarized as follows:

(In millions of won)

		2020					
		Carrying amount	Expected cash flows	6 months or less	6~12 months	1~3 years	More than 3 years
Currency swap							
Assets	₩	1,561	1,584	1,584	-	-	-
Liabilities		(35,678)	(35,919)	(2,814)	(9,515)	(23,590)	-
Forward exchange							
Assets		72	76	-	-	76	-
Liabilities		(99)	(102)	(66)	(17)	(19)	-
	₩	(34,144)	(34,361)	(1,296)	(9,532)	(23,533)	-

(In millions of won)

		2019					
		Carrying amount	Expected cash flows	6 months or less	6~12 months	1~3 years	More than 3 years
Currency swap							
Assets	₩	12,120	16,491	1,313	6,173	9,005	-
Liabilities		(3,650)	(4,224)	(1,084)	(907)	(2,233)	-
Forward exchange							
Assets		679	698	454	120	119	5
Liabilities		(772)	(796)	(96)	(604)	(96)	-
	₩	8,377	12,169	587	4,782	6,795	5

39. Risk of Financial Instruments, Continued

(3) Currency risk

1) Exposure to currency risk

(i) The Group's exposure to foreign currency risk as of December 31, 2020 is as follows:

(In millions of won)		2020					
		USD	**EUR**	**CNY**	**JPY**	**Others**	**Total**
Cash and cash equivalents	₩	345,322	132	-	212	15,088	360,754
Trade and other receivables		477,353	5,688	-	226	152,340	635,607
Contract assets		2,475,439	6,531	-	-	80,799	2,562,769
		3,298,114	12,351	-	438	248,227	3,559,130
Trade and other payables		(345,213)	(28,320)	(745)	(2,237)	(248,054)	(624,569)
Borrowings and bonds		(1,233,373)	(98,790)	-	-	(6,763)	(1,338,926)
Other provision		-	-	-	-	(12,718)	(12,718)
		(1,578,586)	(127,110)	(745)	(2,237)	(267,535)	(1,976,213)
Net exposure to statement of financial position		1,719,528	(114,759)	(745)	(1,799)	(19,308)	1,582,917
Derivative contracts(*)		185,855	1,845	-	-	7	187,707
Net exposure	₩	1,905,383	(112,914)	(745)	(1,799)	(19,301)	1,770,624

(*) Derivative contracts to hedge the risk of exchange rate fluctuations are not considered effectiveness of the hedge.

(ii) The Group's exposure to foreign currency risk as of December 31, 2019 is as follows:

(In millions of won)		2019					
		USD	**EUR**	**CNY**	**JPY**	**Others**	**Total**
Cash and cash equivalents	₩	294,577	398	-	66	23,000	318,041
Trade and other receivables		737,828	820	-	287	17,837	756,772
Contract assets		2,418,451	17,226	-	-	19,144	2,454,821
		3,450,856	18,444	-	353	59,981	3,529,634
Trade and other payables		(430,601)	(66,981)	(136)	(3,507)	(95,101)	(596,326)
Borrowings and bonds		(1,341,091)	(70,908)	-	-	(5,337)	(1,417,336)
Other provision		-	-	-	-	(8,257)	(8,257)
		(1,771,692)	(137,889)	(136)	(3,507)	(108,695)	(2,021,919)
Net exposure to statement of financial position		1,679,164	(119,445)	(136)	(3,154)	(48,714)	1,507,715
Derivative contracts(*)		(48,102)	2,032	-	-	578	(45,492)
Net exposure	₩	1,631,062	(117,413)	(136)	(3,154)	(48,136)	1,462,223

(*) Derivative contracts to hedge the risk of exchange rate fluctuations are not considered effectiveness of the hedge.

39. Risk of Financial Instruments, Continued

(3) Currency risk, continued

1) Exposure to currency risk, continued

(iii) Exchange rates have been applied for the periods ended December 31, 2020 and 2019 are as follows:

(In won)		Average rate		Year-end spot rate	
		2020	**2019**	**2020**	**2019**
USD	₩	1,180.05	1,183.36	1,088.00	1,157.80
EUR		1,345.99	1,316.54	1,338.24	1,297.43
CNY		170.88	168.71	166.96	165.74
JPY(100)		1,105.07	1,095.56	1,054.26	1,063.47

2) Sensitivity analysis

A weakening of the won, against the USD, EUR, CNY, JPY and others as of December 31, 2020 and 2019 would have changed profit or loss by the amounts shown below. This analysis is based on foreign currency exchange rate variances that the Group considered to be reasonably possible at the reporting date. In addition, this analysis assumes that all other variables, in particular interest rates, remain constant. The changes in profit or loss are as follows:

(In millions of won)		Profit or loss	
		2020	**2019**
USD (3 percent strengthening)	₩	57,161	48,932
EUR (3 percent strengthening)		(3,387)	(3,522)
CNY (3 percent strengthening)		(22)	(4)
JPY (3 percent strengthening)		(54)	(95)

A strengthening of the won against the above currencies as of December 31, 2020 would have had the equal but opposite effect on the above currencies to the amounts shown above, assuming all other variables remain constant.

(4) Interest rate risk

1) The carrying amounts of the Group's interest-bearing financial instruments as of December 31, 2020 and 2019 is as follows:

(In millions of won)		**2020**	**2019**
Fixed interest rate instruments:			
Financial assets	₩	1,908,326	1,589,659
Financial liabilities		(3,120,674)	(2,813,448)
	₩	(1,212,348)	(1,223,789)
Floating interest rate instruments:			
Financial assets	₩	3,091	3,847
Financial liabilities		(1,426,175)	(1,089,264)
	₩	(1,423,084)	(1,085,417)

39. Risk of Financial Instruments, Continued

(4) Interest rate risk, continued

2) Fair value sensitivity analysis for fixed rate instruments

Interest rate risk arises from savings and borrowings with floating interest rates. The Group properly hedges the risk in borrowings with floating interest rates through interest rate swaps. Interest rate swap contracts as of December 31, 2020 are as follows:

(In thousands of foreign currency)

Counterparties	Amount	Interest rate		Expiration date
KEB Hana Bank	USD 100,000	Receives floating interest rate	USD LIBOR(3M)+2.00%	2021.02.26
		Pays fixed interest rate	3.64%	
KEB Hana Bank	USD 100,000	Receives floating interest rate	USD LIBOR(3M)+2.48%	2023.07.21
		Pays fixed interest rate	2.81%	
KEB Hana Bank	USD 209,399	Receives floating interest rate	USD LIBOR(1M)+1.90%	2021.10.29
		Pays fixed interest rate	2.15%	
KEB Hana Bank and others	USD 140,000	Receives floating interest rate	USD LIBOR(3M)+0.95%	2022.12.12
		Pays fixed interest rate	1.80%	
Korea Development Bank	USD 30,000	Receives floating interest rate	USD LIBOR(3M)+1.60%	2021.09.17
		Pays fixed interest rate	2.05%	

3) Cash flow sensitivity analysis for floating interest rate instruments

A change of 100 basis points in interest rates as of December 31, 2020 and 2019 would have increased (decreased) profit or loss by the amounts shown below. This analysis assumes that all other variables, in particular foreign currency rates, remain constant.

The changes in profit or loss are as follows:

(In millions of won)		Profit or loss	
		100 bp increase	100 bp decrease
2020			
Floating interest rate instruments	₩	(14,231)	14,231
Interest rate swap		6,304	(6,304)
Net cash flow sensitivity	₩	(7,927)	7,927
2019			
Floating interest rate instruments	₩	(10,854)	10,854
Interest rate swap		6,764	(6,764)
Net cash flow sensitivity	₩	(4,090)	4,090

39. Risk of Financial Instruments, Continued

(5) Fair value

1) Fair values versus carrying amounts

(i) The fair values and the carrying amounts of financial assets and liabilities as of December 31, 2020 are as follows:

(In millions of won)		2020			
		Fair value-hedging instruments	**Financial instruments measured at FVTPL**	**Equity investments measured at FVOCI**	**Financial instruments measured at amortized cost**
Financial assets measured at fair value:					
Financial assets measured at FVTPL(*1)	₩	-	7,808	-	-
Financial assets measured at FVOCI(*2)		-	-	1,738	-
Derivative assets		225,102	-	-	-
		225,102	7,808	1,738	-
Financial assets not measured at fair value:					
Cash and cash equivalents		-	-	-	1,314,823
Financial instruments		-	-	-	554,214
Trade and other receivables		-	-	-	945,037
Contract assets		-	-	-	2,624,966
		-	-	-	5,439,040
Total financial assets	₩	225,102	7,808	1,738	5,439,040
Financial liabilities measured at fair value:					
Derivative liabilities	₩	37,396	-	-	-
Financial liabilities not measured at fair value:					
Borrowings		-	-	-	4,184,530
Bonds		-	-	-	362,157
Trade and other payables		-	-	-	1,645,860
Lease liabilities		-	-	-	16,343
Other provision		-	-	-	12,718
		-	-	-	6,221,608
Total financial liabilities	₩	37,396	-	-	6,221,608

(*1) The amounts of financial assets that were recorded at their acquisition cost because the fair values cannot be measured reliably as of December 31, 2020 are ₩271 million.

(*2) The amounts of financial assets that were recorded at their acquisition cost because the fair values cannot be measured reliably as of December 31, 2020 are ₩1,738 million.

39. Risk of Financial Instruments, Continued

(5) Fair value, continued

1) Fair values versus carrying amounts, continued

(ii) The fair values and the carrying amounts of financial assets and liabilities as of December 31, 2019 are as follows:

(In millions of won)		2019			
		Fair value-hedging instruments	**Financial instruments measured at FVTPL**	**Equity investments measured at FVOCI**	**Financial instruments measured at amortized cost**
Financial assets measured at fair value:					
Financial assets measured at FVTPL(*1)	₩	-	388,805	-	-
Financial assets measured at FVOCI(*2)		-	-	1,738	-
Derivative assets		94,250	-	-	-
		94,250	388,805	1,738	-
Financial assets not measured at fair value:					
Cash and cash equivalents		-	-	-	993,633
Financial instruments		-	-	-	188,187
Trade and other receivables		-	-	-	1,364,253
Contract assets		-	-	-	2,548,128
		-	-	-	5,094,201
Total financial assets	₩	94,250	388,805	1,738	5,094,201
Financial liabilities measured at fair value:					
Derivative liabilities	₩	139,743	-	-	-
Financial liabilities not measured at fair value:					
Borrowings		-	-	-	3,530,621
Bonds		-	-	-	371,778
Trade and other payables		-	-	-	1,679,804
Lease liabilities		-	-	-	8,653
Other provision		-	-	-	8,257
		-	-	-	5,599,113
Total financial liabilities	₩	139,743	-	-	5,599,113

(*1) The amounts of financial assets that were recorded at their acquisition cost because the fair values cannot be measured reliably as of December 31, 2019 are ₩2,810 million.

(*2) The amounts of financial assets that were recorded at their acquisition cost because the fair values cannot be measured reliably as of December 31, 2019 are ₩1,738 million.

39. Risk of Financial Instruments, Continued

(5) Fair value, continued

2) Interest rates used for determining fair value

The interest rates used to discount estimated cash flows was determined by adding an adequate credit spread to the government yield curve at the reporting date. The interest rates applied as of December 31, 2020 and 2019 are as follows:

(In percentage)	**2020**	**2019**
Derivatives	2.88	4.57

3) Fair value hierarchy

The Group classified fair value measurements in accordance with the fair value hierarchy which reflects the significance of the inputs used in fair value measurements:

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

The financial instruments measured at fair value, by fair value hierarchy as of December 31, 2020 and 2019 are as follows:

(In millions of won)		**Level 1**	**Level 2**	**Level 3**	**Total**
2020:					
Financial assets measured at FVTPL	₩	-	-	7,537	7,537
Derivative assets		-	225,102	-	225,102
Derivative liabilities		-	37,396	-	37,396
2019:					
Financial assets measured at FVTPL	₩	-	380,997	4,998	385,995
Derivative assets		-	94,250	-	94,250
Derivative liabilities		-	139,743	-	139,743

The fair value of financial instruments traded in active markets is based on quoted market prices at the end of reporting period. A market is regarded as active if quoted prices are readily and regularly available from an exchange, dealer, broker, industry group, pricing service, or regulatory agency, and those prices represent actual and regularly occurring market transactions on an arm's length basis. The quoted market price used for financial assets held by the Group is the current bid price. These instruments are included in level 1.

The fair value of financial instruments that are not traded in an active market is determined by using valuation techniques. These valuation techniques maximize the use of observable market data where it is available and rely as little as possible on entity specific estimates. If all significant inputs required to fairly value an instrument are observable, the instrument is included in level 2.

If one or more of the significant inputs is not based on observable market data, the instrument is included in level 3.

39. Risk of Financial Instruments, Continued

(5) Fair value, continued

3) Fair value hierarchy, continued

Specific valuation techniques used to value financial instruments include:

- Quoted market prices or dealer quotes for similar instruments.
- The fair value of forward foreign exchange contracts is determined using forward exchange rates at the end of reporting period, with the resulting value discounted back to present value.
- Other techniques, such as discounted cash flow analysis, are used to determine fair value for the remaining financial instruments.

Unlisted equity securities, investments in capital and other investments in entities newly established or having no comparative entity are excluded from the fair value valuation because their fair value cannot be measured reliably.

(6) Valuation techniques and input variables of Level 2 fair values

The valuation techniques and input variables used in measuring Level 2 fair values as of December 31, 2020 and 2019 are as follows:

(In millions of won)

		2020	2019	Valuation techniques	Input variables
Financial assets measured at FVTPL:					
Beneficiary certificates and others	₩	-	380,997	Profit value approach	Interest rate and others
Derivatives:					
Derivative assets		225,102	94,250	Cash flow discount model	Foreign currency forward price, discount rate and others
Derivative liabilities		37,396	139,743	Cash flow discount model	Foreign currency forward price, discount rate and others

(7) Level 3 fair values

1) Changes in assets which are classified as Level 3 fair values among assets measured at fair value for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)

		Financial assets measured at FVTPL	
		2020	2019
Beginning balance	₩	4,998	-
Acquisition		-	4,998
Transfer to Level 3		2,539	-
Ending balance	₩	7,537	4,998

39. Risk of Financial Instruments, Continued

(7) Level 3 fair values, continued

2) The valuation techniques and input variables used in measuring Level 3 fair values as of December 31, 2020 and 2019 are as follows:

(In millions of won)

		2020	2019	Valuation techniques	Input variables	Significant unobservable input variables	Ranges of significant unobservable input variables
Financial assets measured at FVTPL:							
Machinery Financial Cooperative	₩	4,998	4,998	Net asset value model	-	-	-
Construction Guarantee Cooperative		2,539	-	Net asset value mode	-	-	-

(8) Offsetting of financial assets and financial liabilities

1) The details of financial assets and financial liabilities offsetting arrangements as of December 31, 2020 are as follows:

(In millions of won)

		2020			
		Total recognized financial assets	Total recognized financial assets that will be offset	Net financial assets presented in the statement of financial position	Net amount
Financial assets					
Trade and other receivables	₩	160	(100)	60	60
Financial liabilities					
Trade and other payables		1,466	(100)	1,366	1,366

2) The details of financial assets and financial liabilities offsetting arrangements as of December 31, 2019 are as follows:

(In millions of won)

		2019			
		Total recognized financial assets	Total recognized financial assets that will be offset	Net financial assets presented in the statement of financial position	Net amount
Financial assets					
Trade and other receivables	₩	43	(41)	2	2
Financial liabilities					
Trade and other payables		2,016	(41)	1,975	1,975

40. Commitments and Contingencies

(1) As of December 31, 2020, the Group has entered into general loan agreements with Korea Development Bank and others amounting to ₩2,717,000 million and USD 659,910 thousand.

(2) As of December 31, 2020, the Group has entered into credit facilities agreements such as letters of credit with KEB Hana Bank and others for the Group's exports and imports amounting to USD 1,550,329 thousand.

(3) As of December 31, 2020, the Group has entered into credit facilities agreements such as pre-shipment credit with Export-Import Bank of Korea and others amounting to ₩574,500 million.

(4) As of December 31, 2020, the Group has provided performance guarantees in relation to "Jazan Refinery and Terminal Project Package 2" (contract amount: USD 345,668 thousand) which is being built by Hyundai Arabia Company L.L.C. The Group has also provided performance guarantees in relation to "Dangote RFCC Onshore Project" which is being built by Hyundai Heavy Industries Free Zone Enterprise, amounting to USD 8,000 thousand.

(5) As of December 31, 2020, in connection with the Group's contract performance guarantees, the Group has been provided with guarantees amounting to ₩2,718,542 million and USD 9,244,898 thousand by various financial institution. Among them, the Company has also been provided with payment guarantees in relation to ship advances from customers amounting to USD 7,185,856 thousand by Export-Import Bank of Korea and others. Regarding this, the Group provides as collateral its ships under construction and construction materials.

(6) The Group has entered into financial asset transfer agreements in order to sell guarantee deposits of construction which the Group has been proceeding with various banks as of December 31, 2020 financial asset transfer agreements are as follows:

(In thousands of foreign currency)

	Bank	Transfer asset	Commitment limit	Running balance
SHUQAIQ	SABB	FAC reserve	USD 189,910	USD 189,910

(7) The capital increase of Korea Shipbuilding & Offshore Engineering Co., Ltd. (Hyundai Heavy Industries Co., Ltd. before split-off) was made in 2018 and allocated to employee stock ownership association. As of December 31, 2020, the Group and existing entity jointly provide debt guarantees to employee stockholders for loan of employee stock acquisition at the limit of ₩104,735 million. As of December 31, 2020, the total amount of liabilities of the employee stockholders is ₩95,214 million.

41. Litigations

(1) A claim for damages (Seoul Central District Court 2016 gahap 519022)

Date of filing	October 14, 2015
Litigant	Plaintiff: Korea Gas Corporation, Defendant: The Parent Company and 18 other firms
Litigation content	Korea Gas Corporation filed a suit against 19 firms including the Parent Company claiming compensation (amounting to ₩108,000 million) for a damage arising from bidding collusion of first and second main pipe constructions which are ordered to Doosan Heavy Industries & Construction Co., Ltd., Hyundai Engineering & Construction Co., Ltd. and 22 other construction firms by Korea Gas Corporation.
Litigation value	₩108,000 million
The progress of litigation	In progress after filing appeals on October 14, 2015.
Future litigation schedule and countermeasures	Currently, the first trial suit is in progress.
The effect on the Group as a result of litigation	If the Group loses the case, it is expected to make an additional loss from compensation only for the Group's share of obligation. Currently, the impact on the Group's financial statements, if any, cannot be reliably estimated.

(2) Ordinary wage lawsuit (Supreme Court 2016 da 7975)

Date of filing	December 28, 2012
Litigant	Plaintiff: Jeong and nine others, Defendant: The Parent Company
Litigation content	Plaintiff filed a suit claiming that total bonuses should be included in the ordinary wage category and recalculated.
Litigation value	₩630 million
The progress of litigation	Defendant partially lost the first trial (Ulsan District Court 2012 gahap 10108) on February 12, 2015. Defendant totally won the second trial (Busan High Court 2015 na 1888) on January 13, 2016. Plaintiff filled appeals and the third trial is in progress (Supreme Court 2016 da 7975) on January 28, 2016. Supreme Court en banc is in progress on March 19, 2020.
Future litigation schedule and countermeasures	Currently, the 3rd trial at the supreme court is in progress and the Supreme Court examines a principal of law.
The effect on the Group as a result of litigation	If the Group loses the case, it is expected to make an additional loss from compensation. Currently, the impact on the Group 's financial statements, if any, cannot be reliably estimated.

41. Litigations, Continued

(3) KOC Claim Arbitration

Date of filing	February 17, 2020
Litigant	Plaintiff: Kuwait Oil Company, Defendant: The Parent Company and Korea Shipbuilding & Offshore Engineering Co., Ltd.
Litigation content	The Kuwait Oil Company (KOC) claimed compensation for a defect to the part of construction delivered by Offshore, Industrial Plant and Engineering segment.
Litigation value	USD 64 million
The progress of litigation	The KOC filed a request for arbitration with the London International Court of Arbitration (LCIA) on February 17, 2020. The KOC submitted a statement of claiming compensation for a defect to the part of construction on January 30, 2021.
Future litigation schedule and countermeasures	The Group will submit a response to the statement of plaintiff.
The effect on the Group as a result of litigation	If the Group loses the case, it is expected to make an additional loss from compensation. Currently, the impact on the Group's financial statements, if any, cannot be reliably estimated.

In addition to the cases mentioned above, the Group is currently a defendant in 47 lawsuits involving claims amounted to ₩206,100 million. Currently, the impact on the Group's financial statements, if any, cannot be reliably estimated.

Meanwhile, as of June 17, 2019, a lawsuit was filed against the Parent Company for invalidity of split-off June 1, 2019 and was filed for an injunction to suspend the general shareholders' meeting. The application for an injunction was rejected in both the first trial and the appeal trial and was rejected in the second appeal on April 17, 2020.

42. Related Parties

(1) As of December 31, 2020, related parties with the Group are as follows:

Ultimate Parent	Main business
Korea Shipbuilding & Offshore Engineering Co., Ltd.	Research, development and investment

Associate	
KC LNG Tech Co., Ltd.(*1)	Other engineering services

Others (large-scale corporate conglomerate)(*3)	Main business
Hyundai Heavy Industries Holdings Co., Ltd.(*2)	Investment
Hyundai Samho Heavy Industries Co., Ltd.	Shipbuilding
Hyundai Mipo Dockyard Co., Ltd.	Shipbuilding
Hyundai Hyms Co., Ltd.	Sale and manufacture of machinery equipment for shipbuilding
KOMAS Corporation	Shipping
Hyundai Engineering & Technology Co., Ltd.	Other engineering services
Ulsan Hyundai Football Club Co., Ltd.	Football club
Hyundai Heavy Industries Mos Co., Ltd.	Maintenance services of business facilities
Hyundai Energy Solutions Co., Ltd.	Solar photovoltaic and renewable energy
Hyundai Heavy industries Power Systems Co., Ltd.	Power/industrial boiler business
Yantai Hyundai Moon Heavy Industries Co., Ltd.	Sale and manufacture of industrial boilers
Hyundai Seentec Co., Ltd.	Design of boilers
HYUNDAI-VIETNAM SHIPBUILDING CO., LTD.	Shipbuilding
Hyundai Transformers and Engineering India Private. Ltd.	Sale and manufacture of transformers
PHECO Inc.	Design services for offshore facilities
Hyundai Heavy Industries Brasil - Manufacturing and Trading of Construction Equipment	Manufacture, trade and repair of heavy equipment
Hyundai Heavy Industries Miraflores Power Plant Inc.	Manufacturing
Hyundai Energy Solutions America Inc.	Sales of solar module
HHI Mauritius Limited	Manufacturing
Hyundai Heavy Industries Technology Center India Pvt., Ltd.	Consulting of engineering
Hyundai West Africa Limited	Manufacture of other transport equipment
Hyundai Arabia Company L.L.C.	Industrial plant construction
Hyundai Samho Heavy Industries Panama, Inc.	Civil engineering
Hyundai Electric & Energy Systems Co., Ltd.	Sale and manufacture of industrial electric equipment
Hyundai Construction Equipment Co., Ltd.	Sale and manufacture of machinery equipment for construction
Hyundai Global Service Co., Ltd.	Engineering services
Hyundai Oilbank Co., Ltd.	Manufacturing of petroleum products
Hyundai Robotics Co., Ltd.(*2)	Manufacturing of industrial robots
Other related parties of Hyundai Heavy Industries Holdings Co., Ltd.	Other business
Other related parties of Hyundai Electric & Energy Systems Co., Ltd.	Other business
Other related parties of Hyundai Construction Equipment Co., Ltd.	Other business
Other related parties of Hyundai Global Service Co., Ltd.	Other business
Other related parties of Hyundai Oilbank Co., Ltd.	Other business
Other related parties	Other business

42. Related Parties, Continued

(1) As of December 31, 2020, related parties with the Group are as follows, continued:

(*1) For the period ended December 31, 2020, it was newly acquired and incorporated as an associate.
(*2) For the period ended December 31, 2020, Hyundai Heavy Industries Holdings Co., Ltd. newly established a subsidiary, Hyundai Robotics Co., Ltd., by dividing all of its robot business segments except for investment business segments and others.
(*3) Hyundai (Shandong) Heavy Industries Machinery Co., Ltd. was excluded from related parties due to liquidation for the period ended December 31, 2020.

(2) Transactions with related parties

1) Significant transactions for the periods ended December 31, 2020 and 2019 with related parties are as follows:

(In millions of won)

		2020		
		Sales and others	Purchases and others	
		Sales(*1)	Purchase of raw materials	Purchase of others
Ultimate Parent				
Korea Shipbuilding & Offshore Engineering Co., Ltd.	₩	8,339	15,972	78,404
Others (large-scale corporate conglomerate)				
Hyundai Heavy Industries Holdings Co., Ltd.		2,519	-	-
Hyundai Electric & Energy Systems Co., Ltd.		22,491	65,369	32,724
Hyundai Construction Equipment Co., Ltd.		14,845	6	2,239
Hyundai Samho Heavy Industries Co., Ltd.		478,676	1,649	13,891
Hyundai Mipo Dockyard Co., Ltd.		356,255	14,324	244
Hyundai Engineering & Technology Co., Ltd.		630	18,738	-
Hyundai Oilbank Co., Ltd.		132	43,805	452
Hyundai Hyms Co., Ltd.		626	47,829	95
Hyundai Heavy Industries Mos Co., Ltd.		4,909	133,633	-
Hyundai Global Service Co., Ltd.(*2)		18,553	8,458	42,993
Hyundai Heavy industries Power Systems Co., Ltd.		11,702	50,122	202
Hyundai Arabia Company L.L.C.		810	-	-
International Maritime Industries Company		37,983	-	-
Hyundai Robotics Co., Ltd.		660	-	-
Others		5,033	1,694	5,840
		955,824	385,627	98,680
	₩	964,163	401,599	177,084

(*1) Includes disposal of property, plant and equipment, finance income and others.
(*2) In addition to the above transactions, the Group has transferred ship's digital control business for ₩12,291 million to Hyundai Global Service Co., Ltd. which is related party.

In addition to the above transactions, the details of acquisition of investment in associate from related parties for the period ended December 31, 2020, are as follows:

(In millions of won)

Counter parties	Acquired property	Company		Acquired amount	Note
Korea Shipbuilding & Offshore Engineering Co., Ltd.	Investment in associate	KC LNG Tech Co., Ltd.	₩	946	All of shares held

42. Related Parties, Continued

(2) Transactions with related parties, continued

1) Significant transactions for the periods ended December 31, 2020 and 2019 with related parties are as follows, continued:

(In millions of won)

		2019		
		Sales and others	Purchases and others	
		Sales(*1)	Purchase of raw materials	Purchase of others
Ultimate Parent				
Korea Shipbuilding & Offshore Engineering Co., Ltd.	₩	6,407	9,392	38,042
Others (large-scale corporate conglomerate)				
Hyundai Heavy Industries Holdings Co., Ltd.		394	-	1,806
Hyundai Electric & Energy Systems Co., Ltd.(*2)		12,809	32,557	2,812
Hyundai Construction Equipment Co., Ltd.		7,828	294	1,936
Hyundai Samho Heavy Industries Co., Ltd.		247,335	2,200	-
Hyundai Mipo Dockyard Co., Ltd.		232,833	7,329	-
Hyundai Engineering & Technology Co., Ltd.		338	10,942	-
Hyundai Oilbank Co., Ltd.		2	27,127	131
Hyundai Hyms Co., Ltd.		1,129	34,848	57
Hyundai Heavy Industries Turbomachinery Co., Ltd.		1,270	-	1,830
Hyundai Heavy Industries Mos Co., Ltd.		3,114	82,265	-
Hyundai Global Service Co., Ltd.		11,294	784	32,325
Hyundai Arabia Company L.L.C.		409	-	-
Wärtsilä-Hyundai Engine Company Ltd.		198	12,251	-
Others		29,479	20,887	1,761
		548,432	231,484	42,658
	₩	554,839	240,876	80,700

(*1) Includes disposal of property, plant and equipment, finance income and others.
(*2) In addition to the above transactions, the Group has acquired ship's digital control business by transfer for ₩18,934 million from Hyundai Electric & Energy Systems Co., Ltd. which is related party.

In addition to the above transactions, the details of acquisition of investment in capital from related parties for the period ended December 31, 2019, are as follows:

(In millions of won)

Counter parties	Acquired property	Company		Acquired amount	Note
Korea Shipbuilding & Offshore Engineering Co., Ltd.	Investment in capital	Korea Defense Industry Association	₩	1,738	All of shares held
		Machinery Financial Cooperative		4,998	All of shares held
		Construction Guarantee Cooperative		2,539	All of shares held
		Busan Marine Equipment Association		230	All of shares held
		Fire Guarantee		20	All of shares held
		Korea Marine Equipment Association		21	All of shares held

42. Related Parties, Continued

(2) Transactions with related parties, continued

2) Outstanding balances as of December 31, 2020 and 2019 with related parties are as follows:

In millions of won)		2020			
		Trade receivables and other receivables		Trade payables and other payables	
		Trade receivables	Other receivables	Trade payables	Other payables
Ultimate Parent					
Korea Shipbuilding & Offshore Engineering Co., Ltd.	₩	1,709	550	18,414	131
Others (large-scale corporate conglomerate)					
Hyundai Heavy Industries Holdings Co., Ltd.		19	-	-	-
Hyundai Electric & Energy Systems Co., Ltd.		2,341	3,634	28,542	-
Hyundai Construction Equipment Co., Ltd.		1,292	585	181	63
Hyundai Samho Heavy Industries Co., Ltd.		106,349	287	1,340	93,719
Hyundai Mipo Dockyard Co., Ltd.		94,177	84	1,879	96,682
Hyundai Engineering & Technology Co., Ltd.		13	13	1,693	-
Hyundai Oilbank Co., Ltd.		4	153	16,498	-
Hyundai Hyms Co., Ltd.		20	1	1,899	-
Hyundai Heavy Industries Mos Co., Ltd.		448	266	14,852	-
Hyundai Global Service Co., Ltd.		3,033	648	22,811	556
Hyundai Heavy industries Power Systems Co., Ltd.		98	3,633	2,484	-
Hyundai Arabia Company L.L.C.		13,473	167,232	-	-
International Maritime Industries Company		2,720	-	-	19,343
Hyundai Robotics Co., Ltd.		104	191	32	-
Others		322	678	1,296	-
		224,413	177,405	93,507	210,363
	₩	226,122	177,955	111,921	210,494

42. Related Parties, Continued

(2) Transactions with related parties, continued

2) Outstanding balances as of December 31, 2020 and 2019 with related parties are as follows, continued:

(In millions of won)		2019			
		Trade receivables and other receivables		Trade payables and other payables	
		Trade receivables	Other receivables	Trade payables	Other payables
Ultimate Parent					
Korea Shipbuilding & Offshore Engineering Co., Ltd.	₩	1,149	1,895	33,086	752
Others (large-scale corporate conglomerate)					
Hyundai Heavy Industries Holdings Co., Ltd.		110	16	1,987	381
Hyundai Electric & Energy Systems Co., Ltd.		2,255	3,207	20,720	793
Hyundai Construction Equipment Co., Ltd.		1,133	1,557	2,290	63
Hyundai Samho Heavy Industries Co., Ltd.		149,481	4,162	28	121,565
Hyundai Mipo Dockyard Co., Ltd.		120,100	324	4,103	96,257
Hyundai Engineering & Technology Co., Ltd.		15	-	1,658	-
Hyundai Oilbank Co., Ltd.		2	155	17,995	-
Hyundai Hyms Co., Ltd.		17	1	961	-
Hyundai Heavy Industries Mos Co., Ltd.		995	173	21,849	-
Hyundai Global Service Co., Ltd.		5,002	2,309	11,115	1,219
Hyundai Arabia Company L.L.C.		12,954	162,154	-	-
Wärtsilä-Hyundai Engine Company Ltd.		-	-	25	-
Others		19,310	10,415	536	22,918
		311,374	184,473	83,267	243,196
	₩	312,523	186,368	116,353	243,948

The details of allowance for doubtful receivables for the related parties for the periods ended December 31, 2020 and 2019 are as follows:

(In millions of won)	2020			2019		
	Beginning balance	Impairment loss recognized	Ending balance	Beginning balance	Impairment loss recognized	Ending balance
₩	175,229	5,476	180,705	160,482	14,747	175,229

3) The details of fund transactions with related parties for the periods ended December 31, 2020 and 2019 are as follows:

(In thousands of foreign currency)		2020				
		Currency	Beginning balance	Increase	Impairment loss recognized	Ending balance
Hyundai Arabia Company L.L.C.	Loans	USD	146,000	4,000	-	150,000
	Allowance for doubtful accounts	USD	(146,000)	-	(4,000)	(150,000)

42. Related Parties, Continued

(2) Transactions with related parties, continued

3) The details of fund transactions with related parties for the periods ended December 31, 2020 and 2019 are as follows, continued:

(In thousands of foreign currency)

		2019				
		Currency	Beginning balance	Increase	Impairment loss recognized	Ending balance
Hyundai Arabia Company L.L.C.	Loans	USD	134,000	12,000	-	146,000
	Allowance for doubtful accounts	USD	(134,000)	-	(12,000)	(146,000)

(3) As of December 31, 2020, the Group has provided performance guarantees in relation to "JAZAN Refinery and Terminal Project Package 2" (contract amount: USD 345,668 thousand) which is being built by Hyundai Arabia Company L.L.C. The Group has also provided performance guarantees in relation to "Dangote RFCC Onshore Project" which is being built by Hyundai Heavy Industries Free Zone Enterprise, amounting to USD 8,000 thousand.

(4) As of December 31, 2020, the Group has been provided with performance guarantees by the Korea Shipbuilding & Offshore Engineering Co., Ltd. in relation to the contracts of material supply, license and service which the Group will execute with Saudi Engines Manufacturing Company.

(5) Compensation for key management of the Group for the periods ended December 31, 2020 and 2019 is as follows:

(In millions of won)

		2020	2019
Short-term salaries	₩	1,355	1,631
Post-employment benefit costs		327	287
	₩	1,682	1,918

The above key management is consists of directors and internal auditors who have important rights and responsibilities for the planning, operation and control of the Group.

43. Non-current assets held for sale

(1) Non-current assets held for sale as of December 31, 2020 and 2019 are as follows:

(In millions of won)		2020	2019
Property, plant and equipment(*)	₩	-	5,037

(*) Property, plant and equipment that are determined to be sold are classified as non-current assets held for sale.

(2) Business transfer

In order to integrate ship management services, to develop customized products and provide consistent and differentiated services, the board of directors decided to transfer ship's digital control business to Hyundai Global Service Co., Ltd. which is other related party included in large-scale corporate conglomerate, as of May 21, 2020. Assets and liabilities held in the relevant segment have been reclassified as non-current assets and liabilities held for sale, and disposal group are summarized as follows:

(In millions of won)		Amount
Non-current assets held for sale:		
Cash and cash equivalents	₩	2,986
Trade and other receivables		630
Inventories		16,982
Property, plant and equipment		635
	₩	21,233
Non-current liabilities held for sale:		
Trade and other payables	₩	5,986
Liabilities for defined benefit plans		1,064
Provision for construction losses		150
Provision for product warranty		1,358
	₩	8,558

The above disposal group was sold for the period ended December 31, 2020 (date of transfer June 1, 2020), and the difference between the carrying amount and the selling price was recognized as loss on disposal of non-current asset held for sale, other non-operating expenses.

44. Establishment of the Company through split-off

The Parent Company was newly established by split-off from the Korea Shipbuilding & Offshore Engineering Co., Ltd. (formerly known as Hyundai Heavy Industries Co., Ltd. before split-off) on June 1, 2019.

(1) General information on split-off

As prescribed in *Articles 530, paragraph 2 or 12 of the Commercial Law*, the dividing company divided the operating segments, established a new entity, and held 100% of the issued shares of the new entity. The dividing company established a new entity by splitting-off the entire shipbuilding-related business except for certain segments such as investment.

	Contents	
Dividing method	Split-off	
Dividing company	Existing entity	Korea Shipbuilding & Offshore Engineering Co., Ltd.
	Newly established entity	Hyundai Heavy Industries Co., Ltd.
Split-off schedule	Resolution date of the board meeting	2019.03.08
	General meeting of shareholders	2019.05.31
	Split-off date	2019.06.01

(2) Property transferred to the newly established entity and its value

The amount of assets and liabilities transferred to the newly established entity through split-off was based on the taking-over lists attached to the split-off plan approved by extraordinary meeting of shareholders on May 31, 2019, and added or subtracted properties' changes that occurred in operating segments took-over by the division until the split-off date.

(3) Accounting for the split-off

(i) The amount of assets and liabilities transferred to the newly established entity through split-off was recorded at the carrying amount at the time of the split-off.

(ii) Only items of deferred tax assets and liabilities that were possible to take-over under the Corporate Tax Act were transferred to the newly established entity.

(iii) If the carrying amount of the net assets acquired as the result of the split-off exceeds the sum of the capital stock, hybrid bonds, and accumulated other comprehensive income, the excess amount was accounted for as paid-in capital in excess of par value.

(4) Matters about the succession of rights and obligations, etc.

In principle, for those active or passive rights and obligations (including those under Public Law), and proprietary rights and relationships (including licensing, labor relations, contractual relations, litigations, etc.), if they are related to the businesses that were split-off, the Parent Company shall be entitled to such rights or assume such obligations. Otherwise, they shall be vested in Korea Shipbuilding & Offshore Engineering Co., Ltd., the existing entity.

(5) Matters about the Parent Company's responsibilities for split-off

The existing entity and newly established entity were divided by a special resolution of general meeting of shareholders according to the provisions of *Article 530, paragraph 3.1 of the Commercial Law*, and both entities are responsible for jointly repaying the debts of Hyundai Heavy Industries Co., Ltd. before the split-off according to the provisions of *Article 530 paragraph 9.1 of the Commercial Law*.

45. Business acquisition

For the period ended December 31, 2019, in order to strengthen competitiveness in ship control, eco-friendly equipment control and others, the Group has acquired ship's digital control business by transfer from Hyundai Electric & Energy Systems Co., Ltd. which aims to manufacture and sale transformers, high-voltage circuit breakers and others. The Group has transferred ship's digital control business to Hyundai Global Service Co., Ltd. which is other related party included in large-scale corporate conglomerate for the period ended December 31, 2020 (See Note 43).

(1) Transfer price

The fair value of each type of transfer price on acquisition date is as follows:

(In millions of won)

		Amount
Cash	₩	18,934

(2) Identifiable assets and liabilities acquired

The fair value of identifiable assets and liabilities acquired on acquisition date is as follows:

(In millions of won)

		Amount
Assets:		
Cash and cash equivalents	₩	41
Trade and other receivables		13,429
Inventories		13,070
Property, plant and equipment		77
Total assets		26,617
Liabilities:		
Trade and other payables		4,582
Liabilities for defined benefit plans		715
Provision for construction losses		683
Provision for product warranty		2,158
Total liabilities		8,138
Fair value of net assets	₩	18,479

(3) Goodwill

Goodwill arising from the business acquisition on acquisition date is as follows:

(In millions of won)		**Amount**
Transfer price	₩	18,934
The fair value of identifiable assets and liabilities acquired		18,479
Goodwill	₩	455

45. Business acquisition, Continued

(4) Valuation method used in measuring fair values of significant assets

The valuation methods used in measuring fair values of significant assets acquired are as follows:

Assets acquired	Valuation methods	
Inventories	Market approach	The fair value was determined by subtracting additional completion costs and selling expenses from the expected sales price of the normal business process and taking normal profits into account.
Property, plant and equipment	Market approach or cost approach	The fair value was determined by considering the price generated from market transactions of similar assets available or the transaction cost considering proper depreciation.

46. Subsequent Events

(1) At the Board of Directors meeting on January 26, 2021, the Parent Company has decided to proceed with listing on the Korea Exchange in 2021.

(2) The Parent Company has issued bonds to raise facility and operating fund, and the details are as follows:

(In millions of won)

Type	Description	Issue	Maturity	Annual interest rate (%)		Amount
Debenture	4th-1	2021.03.05	2023.03.03	1.92	₩	60,000
Debenture	4th-2	2021.03.05	2024.03.05	2.50		240,000
					₩	300,000