

HANWHA CORPORATION and its subsidiaries

Consolidated financial statements
for the year ended December 31, 2023
with the independent auditor's report

HANWHA CORPORATION and its subsidiaries

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Independent auditor's report

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Independent auditor's report on internal control over financial reporting

Report on Effectiveness of Internal Control over Financial Reporting for Consolidation Purposes

Independent auditor's report
(English Translation of a Report Originally Issued in Korean)

The Shareholders and Board of Directors
HANWHA CORPORATION

Opinion

We have audited the consolidated financial statements of HANWHA CORPORATION and its subsidiaries (collectively referred to as the "Group"), which comprise the consolidated statement of financial position as of December 31, 2023, and the consolidated statement of comprehensive income, consolidated statement of changes in equity and consolidated statement of cash flows for the year then ended, and the notes to the consolidated financial statements, including material accounting policy information.

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, 2023, and its consolidated financial performance and its consolidated cash flows for the year then ended in accordance with International Financial Reporting Standards as adopted by the Republic of Korea ("KIFRS").

We have audited the Group's internal control over financial reporting ("ICFR") as of December 31, 2023 based on the Conceptual Framework for Design and Operation of ICFR established by the Operating Committee of ICFR in Korea, in accordance with Korean Standards on Auditing ("KSA"), and our report dated March 19, 2024 expressed an unqualified opinion thereon.

Basis for opinion

We conducted our audit in accordance with KSA. Our responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the consolidated financial statements section of our report. We are independent of the Group in accordance with the ethical requirements that are relevant to our 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.

Emphasis of matter

Without qualifying our opinion, we draw attention to Note 2 to the Group's consolidated financial statements. As explained in Note 2 to the consolidated financial statements, the consolidated financial statements as of and for the year ended December 31, 2022 presented for comparative purposes have been restated due to the application of KIFRS 1117.

Key audit matter

A key audit matter is the matter that, in our professional judgment, was of most significance in our audit of the consolidated financial statements of the current period. This matter was addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a consolidated opinion on these matters.

Assumption of risk rate used in evaluating insurance contract liabilities

As mentioned in Note 2 to the consolidated financial statements (Basis of Preparation and Material Accounting Policies), the Group's insurance contract liabilities consist of the fulfillment cash flows related to future service and the fulfillment cash flows related to contractual service margin and insured events that have occurred but for which claims have not been reported and other incurred insurance expenses.

As explained in Note 3 (Material accounting judgments, estimates and assumptions) to the consolidated financial statements, the measurement of fulfillment cash flows for insurance contracts to which the premium allocation approach is not applied is affected by the assumptions made by an insurance company at the end of the period. Among these assumptions, the risk rate is an assumption related to the estimation of future insurance claims during the insurance period and is the most material item that includes significant judgment by management. Therefore, we identified the assumption of risk rate as our key audit matter considering that it requires our significant attention.

The primary audit procedures we conducted on the assumption of risk rate made by the Group in measuring insurance contract liabilities as of December 31, 2023 are as follows:

- Understand the Group's procedures and calculation criteria for risk rate assumptions, and review that the calculation criteria comply with the Insurance Business Supervision Regulations and Enforcement Rules of the Insurance Business Supervision Regulations.
- Understand internal control related to risk rate assumption calculation and evaluate the effectiveness of design and operation of the internal control.
- Identify any data omission or mapping error by comparing the raw data used in calculating risk rate assumption to the Group's actuarial closing system data and related statements.
- Identify any data omission or mapping error by reconciling risk rate assumption calculations and cash flow model input table using the risk rate assumption.
- Identify any error in details of risk rate assumption by comparing our recalculation result to the Group's result.

Other matters

The consolidated financial statements as of and for the year ended December 31, 2022, not included in this audit report, were audited by Samil PricewaterhouseCoopers whose report dated March 20, 2023 expressed an unqualified opinion thereon.

Meanwhile, the consolidated financial statements on which the above auditor expressed the opinion are the consolidated financial statements before the adjustments in accordance with KIFRS 1117 are reflected, and the consolidated financial statements as of and for the year ended December 31, 2022, presented herein for comparative purposes, are the consolidated financial statements that such adjustments are reflected.

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 KIFRS, and for such internal control as management determines is necessary to enable the preparation of the consolidated financial statements that are free from material misstatement, whether due to fraud or error.

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

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

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

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit

conducted in accordance with KSA 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 KSA, 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.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

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

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

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

The engagement partner on the audit resulting in this independent auditor's report is Seok Young Lee.

Ernst & Young Han Young

March 19, 2024

This audit report is effective as of March 19, 2024, the independent auditor's report date. Accordingly, certain material subsequent events or circumstances may have occurred during the period from the date of the independent auditor's report to the time this report is used. Such events and circumstances could significantly affect the accompanying consolidated financial statements and may result in modifications to this report.

HANWHA CORPORATION and its subsidiaries

Consolidated financial statements
for each of the two years in the period ended December 31, 2023

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

Kim Seung mo
Chief Executive Officer
HANWHA CORPORATION AND ITS SUBSIDIARIES

Hanwha Corporation and its subsidiaries
Consolidated statements of financial position
as of December 31, 2023 and 2022 and January 1, 2022

(in millions of Korean won)

	Notes	December 31, 2023	December 31, 2022	January 1, 2022
Assets				
Current assets				
Cash and cash equivalents	7,8,9,59	₩ 4,909,149	₩ 6,673,028	₩ 5,496,492
Financial assets at fair value through profit or loss	9,11,59	5,669	5,946	-
Financial assets at fair value through other comprehensive income	9,11,59	363	500	44
Financial assets at amortized cost	12,59	23	68	-
Other financial assets	7,9,12,13,55,59	627,823	861,747	588,450
Trade and other receivables	10,55	5,420,413	4,962,880	3,748,904
Other current assets	15,26	4,277,211	3,097,351	2,428,371
Inventories	14	7,749,659	6,557,534	5,166,955
Current tax assets		62,122	33,803	32,496
Assets held for sale (including assets of disposal group)	58	1,467	124,147	136,270
		<u>23,053,899</u>	<u>22,317,004</u>	<u>17,597,982</u>
Non-current assets				
Financial assets at fair value through profit or loss	9,11,59	968,865	700,441	368,075
Financial assets at fair value through other comprehensive income	9,11,59	332,577	472,345	77,129
Other financial assets	7,9,12,13,55,59	361,194	442,756	329,529
Trade and other receivables	10,55	989,602	396,086	487,135
Investments in associates and joint venture	5,55	6,634,602	3,967,508	3,766,911
Investment property	17	1,443,694	1,970,935	1,041,181
Property, plant and equipment	16	19,647,350	15,852,298	11,324,966
Right-of-use assets	19	706,910	610,870	617,239
Intangible assets	18	4,239,031	4,101,230	3,706,148
Other non-current assets	15,26	703,990	481,734	226,133
Deferred tax assets	53	563,375	539,017	610,042
		<u>36,591,190</u>	<u>29,535,220</u>	<u>22,554,488</u>
Assets for financial business				
Cash and cash equivalents	27,28,59	3,619,590	2,923,167	2,105,569
Insurance contract assets	36	723,341	833,743	859,731
Financial assets at fair value through profit or loss	27,29,30,59	47,914,274	45,276,907	46,266,513
Financial assets at fair value through other comprehensive income	27,29,30,59	49,993,915	36,438,736	45,723,161
Financial assets at amortized cost	27,29,30	37,266,154	48,721,939	47,916,610
Investments in associates and joint venture	5,55	595,248	534,736	352,768
Investment property	34	1,524,762	1,740,618	1,870,896
Property, plant and equipment	34	3,346,918	3,324,717	2,814,775
Right-of-use assets	35	287,350	242,672	105,067
Intangible assets	34	742,847	423,543	418,282
Derivative financial assets	27,32,59	854,966	1,007,318	255,011
Current tax assets		310,321	236,492	20,777
Deferred tax assets	53	58,076	1,113,900	287,706
Other financial assets	27,31,55	2,549,206	2,162,606	2,379,501
Other assets	33	306,092	143,608	74,449
		<u>150,093,060</u>	<u>145,124,702</u>	<u>151,450,816</u>
Total assets		<u>₩ 209,738,149</u>	<u>₩ 196,976,926</u>	<u>₩ 191,603,286</u>

Hanwha Corporation and its subsidiaries
Consolidated statements of financial position
December 31, 2023 and 2022 and January 1, 2022

(in millions of Korean won)

	Notes	December 31, 2023	December 31, 2022	January 1, 2022
Liabilities				
Current liabilities				
Trade and other payables	9,20,55,59	₩ 4,977,220	₩ 4,149,014	₩ 4,224,696
Borrowings and debentures	9,21,59	9,671,863	8,305,473	6,323,696
Other financial liabilities	9,13,19,22,59	1,932,679	1,512,974	1,072,249
Provisions	25	336,334	282,237	296,028
Other current liabilities	23	8,950,206	6,209,450	4,320,521
Current tax liabilities		206,289	635,483	231,771
		<u>26,074,591</u>	<u>21,094,631</u>	<u>16,468,961</u>
Non-current liabilities				
Trade and other payables	9,20,55,59	357,333	415,370	410,602
Borrowings and debentures	9,21,59	9,815,600	8,067,264	8,257,694
Other financial liabilities	9,13,19,22,55,59	1,925,762	1,640,192	1,228,168
Net defined benefit liabilities	24	1,692,935	1,546,484	1,690,833
Provisions	25	392,867	336,097	345,807
Other non-current liabilities	23	1,201,573	1,198,512	1,142,964
Deferred tax liabilities	53	1,340,463	1,296,922	1,292,930
		<u>16,726,533</u>	<u>14,500,841</u>	<u>14,368,998</u>
Liabilities for financial business				
Withheld liabilities	27,38	2,236,804	1,986,810	2,265,319
Insurance contract liabilities	36	111,572,538	105,388,267	118,668,342
Policyholder's equity adjustments	36,37	156,475	133,520	15,091
Current tax liabilities		7,047	129,464	19,247
Deferred tax liabilities	53	1,912,628	2,960,530	1,521,872
Derivative financial liabilities	27,59	1,392,904	2,306,919	1,006,887
Net defined benefit liabilities	39	247,524	212,841	249,896
Provisions	40	173,070	170,226	137,147
Other financial liabilities	27,35,41,59	15,807,732	14,800,191	12,118,515
Other liabilities	42	231,564	116,778	82,057
		<u>133,738,286</u>	<u>128,205,546</u>	<u>136,084,373</u>
Total liabilities		<u>176,539,410</u>	<u>163,801,018</u>	<u>166,922,332</u>
Equity				
Share capital	1,43	489,550	489,550	489,550
Capital surplus	43	1,354,755	1,338,136	477,757
Capital adjustments	44	81,298	43,806	11,503
Accumulated other comprehensive loss	45	1,266,309	1,168,146	(966,332)
Retained earnings	46	7,599,123	7,773,529	6,567,294
Equity attributable to owners of the Parent Company		<u>10,791,035</u>	<u>10,813,167</u>	<u>6,579,772</u>
Non-controlling interest		<u>22,407,704</u>	<u>22,362,741</u>	<u>18,101,182</u>
Total equity		<u>33,198,739</u>	<u>33,175,908</u>	<u>24,680,954</u>
Total liabilities and equity		<u>₩ 209,738,149</u>	<u>₩ 196,976,926</u>	<u>₩ 191,603,286</u>

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

The above consolidated statements of financial position should be read in conjunction with the accompanying notes.

Hanwha Corporation and its subsidiaries
Consolidated statements of comprehensive income
for each of the two years in the period ended December 31, 2023

<i>(in millions of Korean won)</i>	Notes	2023	2022
Revenue			
Revenue from non-financial business	26,47,55	₩ 30,322,828	₩ 28,568,270
Revenue from financial business	47,55	22,811,985	22,318,461
		<u>53,134,813</u>	<u>50,886,731</u>
Cost of sales			
Cost of sales from non-financial business	26,48,50,55	25,255,467	23,736,412
Cost of sales from financial business	48,50,55	21,479,608	21,350,711
		<u>46,735,075</u>	<u>45,087,123</u>
Gross profit		6,399,738	5,799,608
Selling and administrative expenses	49,50,55	<u>3,987,818</u>	<u>3,429,970</u>
Operating profit		2,411,920	2,369,638
Other income	51,55	2,406,299	2,446,190
Other expenses	51,55	1,957,068	2,175,239
Finance income	9,27,52	238,876	116,794
Finance costs	9,27,52	902,887	547,445
Share of net profit (loss) of associates and joint venture	5	49,476	(76,020)
		<u>2,246,616</u>	<u>2,133,918</u>
Profit before income tax			
Income tax expense	53	<u>611,101</u>	<u>124,957</u>
Profit for the year		<u>₩ 1,635,515</u>	<u>₩ 2,008,961</u>
Profit is attributable to:			
Owners of the Parent Company		₩ 380,490	₩ 1,174,434
Non-controlling interests		1,255,025	834,527
		<u>₩ 1,635,515</u>	<u>₩ 2,008,961</u>
Other comprehensive loss			
<i>Items that may be reclassified subsequently to profit or loss</i>			
through other comprehensive income		3,100,177	(7,147,768)
Share of other comprehensive income of associates		21,292	188,234
Loss on valuation of derivatives qualifying cash flow hedge		422,386	(675,833)
Overseas business translation		54,951	24,695
<i>Items that will not be reclassified to profit or loss</i>			
Remeasurements of net defined benefit liability	24,39	(103,500)	129,251
through other comprehensive income		(89,299)	(285,678)
through profit or loss (credit risk change)		(178)	(121)
Insurance financial profit and loss	36	(3,884,893)	9,021,796
Surplus on revaluation of assets		<u>125,928</u>	<u>3,016,755</u>
Other comprehensive loss (income) for the year, net of tax		<u>(353,136)</u>	<u>4,271,331</u>
Total comprehensive income for the year		<u>₩ 1,282,379</u>	<u>₩ 6,280,292</u>
Total comprehensive income for the year attributable to:			
Owners of the Parent Company		₩ (45,120)	₩ 3,377,689
Non-controlling interests		1,327,499	2,902,603
		<u>₩ 1,282,379</u>	<u>6,280,292</u>
Earnings per share <i>(in Korean won)</i>			
Basic earnings per ordinary share	54	₩ 3,920	₩ 12,765
Basic earnings per preferred share	54	₩ 3,970	₩ 12,815
Diluted earnings per share <i>(in Korean won)</i>			
Basic earnings per ordinary share	54	₩ 3,872	₩ 12,661
Basic earnings per preferred share	54	₩ 3,922	₩ 12,711

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

The above consolidated statements of comprehensive income should be read in conjunction with the accompanying notes.

Hanwha Corporation and its subsidiaries
Consolidated statements of changes in equity
for each of the two years in the period ended December 31, 2023

(in millions of Korean won)

	Share capital	Capital surplus	Capital adjustments	Accumulated other comprehensive income (loss)	Retained earnings	Non-controlling interests	Total
Balance as of January 1, 2022	₩ 489,550	₩ 468,126	₩ 11,503	₩ (806,368)	₩ 5,332,223	₩ 16,485,616	₩ 21,980,650
Changes in accounting policy (Revaluation of investment property)	-	9,631	-	(159,964)	1,235,072	1,615,565	2,700,304
Restated total equity at the beginning of the financial year	₩ 489,550	₩ 477,757	₩ 11,503	₩ (966,332)	₩ 6,567,295	₩ 18,101,181	₩ 24,680,954
Profit for the year	-	-	-	-	1,174,434	834,527	2,008,961
Other comprehensive income (loss)							
Loss on valuation of financial assets at fair value through other comprehensive income	-	-	-	(3,155,916)	-	(3,991,852)	(7,147,768)
Gain on valuation of financial assets at fair value through other comprehensive income (equity instruments)	-	-	-	(59,822)	-	(225,856)	(285,678)
Loss on valuation of financial liabilities at fair value through profit or loss (credit risk change)	-	-	-	(15)	-	(106)	(121)
Share of other comprehensive income of associates	-	-	-	62,331	-	125,903	188,234
Loss on valuation of derivatives qualifying cash flow hedge	-	-	-	(304,114)	-	(371,719)	(675,833)
Overseas business translation	-	-	-	8,370	-	16,325	24,695
Remeasurements of net defined benefit liability	-	-	-	-	68,777	60,474	129,251
Insurance financial profit and loss	-	-	-	3,993,779	-	5,028,017	9,021,796
Surplus on revaluation of assets	-	-	-	1,589,865	-	1,426,890	3,016,755
Dividends	-	-	-	-	(69,877)	(95,910)	(165,787)
Acquisition of treasury shares	-	-	(9,114)	-	-	-	(9,114)
Grant of share options	-	10,390	-	-	-	-	10,390
Gain on disposal of treasury shares	-	89,513	32,966	-	-	-	122,479
Other capital transactions and others	-	760,476	8,451	-	32,900	1,454,867	2,256,694
Balance as of December 31, 2022	₩ 489,550	₩ 1,338,136	₩ 43,806	₩ 1,168,146	₩ 7,773,529	₩ 22,362,741	₩ 33,175,908
Balance as of January 1, 2023	₩ 489,550	₩ 1,338,136	₩ 43,806	₩ 1,168,146	₩ 7,773,529	₩ 22,362,741	₩ 33,175,908
Changes in accounting policy (Revaluation of investment property)	-	-	-	491,874	(506,795)	(37,551)	(62,472)
Restated total equity at the beginning of the financial year	₩ 489,550	₩ 1,338,136	₩ 43,806	₩ 1,660,020	₩ 7,266,734	₩ 22,325,190	₩ 33,123,436
Profit for the year	-	-	-	-	380,490	1,255,025	1,635,515
Other comprehensive income (loss)							
Loss on valuation of financial assets at fair value through other comprehensive income	-	-	-	1,424,886	-	1,675,291	3,100,177
Loss on valuation of financial assets at fair value through other comprehensive income (equity instruments)	-	-	-	(40,571)	-	(48,728)	(89,299)
Loss on valuation of financial liabilities at fair value through profit or loss (credit risk change)	-	-	-	(39)	-	(139)	(178)
Share of other comprehensive income of associates	-	-	-	(312,152)	-	333,444	21,292
Loss on valuation of derivatives qualifying cash flow hedge	-	-	-	192,527	-	229,859	422,386
Overseas business translation	-	-	-	10,284	-	44,667	54,951
Remeasurements of net defined benefit liability	-	-	-	-	(31,899)	(71,601)	(103,500)
Insurance financial profit and loss	-	-	-	(1,723,161)	-	(2,161,732)	(3,884,893)
Surplus on revaluation of assets	-	-	-	54,515	-	71,413	125,928
Dividends	-	-	-	-	(73,731)	(208,060)	(281,791)
Grant of share options	-	13,170	-	-	-	-	13,170
Other capital transactions and others	-	3,449	37,492	-	57,529	(1,036,925)	(938,455)
Balance as of December 31, 2023	₩ 489,550	₩ 1,354,755	₩ 81,298	₩ 1,266,309	₩ 7,599,123	₩ 22,407,704	₩ 33,198,739

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

The above consolidated statements of changes in equity should be read in conjunction with the accompanying notes.

Hanwha Corporation and its subsidiaries
Consolidated statements of cash flows
for each of the two years in the period ended December 31, 2023

(in millions of Korean won)

	Note	2023	2022
Cash flows from operating activities			
Cash provided by (used in) operations	57	₩ 680,972	₩ (992,085)
Interest and dividends received from financial business		4,552,379	4,331,210
Interest paid for financial business		(411,403)	(223,013)
Income taxes paid		(1,028,563)	(709,826)
Net cash inflow from operating activities		3,793,385	2,406,286
Cash flows from investing activities			
Acquisition of property, plant and equipment		(4,280,385)	(1,540,539)
Proceeds from disposal of property, plant and equipment		147,964	106,282
Acquisition of intangible assets		(298,053)	(294,417)
Proceeds from disposal of intangible assets		22,473	43,449
Acquisition of investment property		(9,619)	(233,620)
Proceeds from disposal of investment property		211,591	290,367
Acquisition of investments in associates		(2,409,338)	(626,222)
Proceeds from disposal of investments in associates		160,048	31,261
Acquisition of financial assets at fair value through profit or loss		(16,987,783)	(4,108,506)
Proceeds from disposal of financial assets at fair value through profit or loss		25,165,881	2,733,063
Acquisition of financial assets at fair value through other comprehensive income		(11,015,227)	(4,525,113)
Proceeds from disposal of financial assets at fair value through comprehensive income		2,724,269	4,062,392
Acquisition of financial assets at amortized cost		(165,174)	(3,384,220)
Proceeds from disposal of financial assets at amortized cost		683,882	4,841,149
Proceeds from disposal of assets classified as held for sale		53,836	272,608
Increase in other financial assets		(1,425,358)	(2,724,311)
Decrease in other financial assets		607,866	910,502
Interests received		293,425	107,542
Dividends received		73,191	78,864
Increase in cash from changes in scope of consolidation		157,181	440,147
Decrease in cash from changes in scope of consolidation		(405,378)	(88,747)
Others		26,473	(4,457)
Net cash outflow from investing activities		(6,668,235)	(3,612,526)
Cash flows from financing activities			
Increase in borrowings and debentures		15,897,225	15,358,061
Repayment of borrowings and debentures		(11,731,021)	(12,490,801)
Increase in other financial liabilities		26,557	66,242
Decrease in other financial liabilities		(87,777)	(77,120)
Increase in non-controlling interests		592,375	1,855,386
Decrease in non-controlling interests		(1,815,431)	(802,789)
Interests paid		(766,493)	(416,057)
Dividends paid		(73,731)	(69,877)
Lease payments paid		(243,141)	(221,890)
Acquisition of treasury shares		-	(9,114)
Net cash inflow from financing activities		1,798,563	3,192,041
Net decrease (increase) in cash and cash equivalents		(1,076,287)	1,985,801
Cash and cash equivalents at the beginning of the financial year		9,596,195	7,602,060
Exchange gains on cash and cash equivalents		8,831	8,334
Cash and cash equivalents at the end of the year in the consolidated statement of financial position		₩ 8,528,739	₩ 9,596,195

The accompanying notes are an integral part of the consolidate financial statements.

The above consolidated statements of cash flows should be read in conjunction with the accompanying notes.

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1. Overview of the parent company

Hanwha Corporation (the “Company”) as the parent company, in accordance with International Financial Reporting Standard as adopted by the Republic of Korea (KIFRS) 1110 *Consolidated Financial Statements*, was established on October 28, 1952 to engage in the manufacturing and selling of explosives, trading, and construction. The Company has manufacturing facilities in the cities of Boeun, Changwon and others and several business offices. The main businesses of the construction segment are residential and commercial buildings including apartments and efficiency apartments, business complex buildings, bridges, railroad and road construction, environment facilities including water and sewage treatment plants, various plants and industrial facilities including thermal power and cogeneration plants, and petrochemical plants.

On June 24, 1976, the Company and its subsidiaries (collectively referred to as the “Group”) listed its stock on the Korea Exchange. Through several capital increases, the share capital of the Group as of December 31, 2023, amounted to ₩ 489,550 million. As of December 31, 2023, the Group’s major shareholders consist of the following:

	Ordinary share (Number of shares)	Preferred share (Number of shares)	Total (Number of shares)	Percentage of ownership (%)
Kim Seung-Youn	16,977,949	1,470,000	18,447,949	18.84
Kim Dong-Kwan	3,683,892	860,654	4,544,546	4.64
HANWHA ENERGY CORPORATION	7,272,546	1,170,479	8,443,025	8.62
Cheonan Bukil Institute and others	4,717,798	186	4,717,984	4.82
Treasury share	1,132,437	-	1,132,437	1.16
Others	41,174,113	19,449,975	60,624,088	61.92
Total	<u>74,958,735</u>	<u>22,951,294</u>	<u>97,910,029</u>	<u>100.00</u>

2. Basis of Preparation and Material Accounting Policies

2.1 Basis of Preparation

The Group maintains its accounting records in Korean won and prepares statutory financial statements in the Korean language (Hangul) in accordance with International Financial Reporting Standards as adopted by the Republic of Korea (KIFRS). The accompanying consolidated financial statements have been condensed, restructured and translated into English from the Korean language financial statements.

Certain information attached to the Korean language financial statements, but not required for a fair presentation of the Group’s financial position, financial performance or cash flows, is not presented in the accompanying consolidated financial statements. In the event of any differences in interpreting the financial statements or the independent auditor’s report thereon, Korean version, which is used for regulatory reporting purposes, shall prevail.

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The consolidated financial statements of the Group have been prepared in accordance with KIFRS. These are the standards, subsequent amendments and related interpretations issued by the International Accounting Standards Board (IASB) that have been adopted by the Republic of Korea. The financial statements have been prepared on a historical cost basis, except for the following:

- certain financial assets and liabilities (including derivative instruments);
- assets held for sale – measured at fair value less costs to sell;
- defined benefit pension plans – plan assets measured at fair value; and
- property, plant and equipment(land) and investment property – measured at fair value.

The preparation of financial statements requires the use of critical accounting estimates. Management also needs to exercise judgement in applying the Group's accounting policies. The areas involving a higher degree of judgment or complexity, or areas where assumptions and estimates are significant to the consolidated financial statements are disclosed in Note 3.

Meanwhile, certain amounts in the consolidated financial statements for the year ended December 31, 2022, have been reclassified to conform to the presentation of the consolidated financial statements for the year ended December 31, 2023. These reclassifications have no effect on previously reported net profit or net assets.

2.2 New and amended standards adopted by the Group

The Group has applied the following standards and amendments for the first time for its annual reporting period beginning on or after January 1, 2023.

- KIFRS 1117 *Insurance Contracts*

KIFRS 1117 *Insurance Contracts* replaces the KIFRS 1104 *Insurance Contracts*. It requires estimating all cash flows arising from insurance contracts, measuring insurance liabilities using the discount rate that reflects assumptions and risks as of the reporting date. Revenue is recognized on an earned basis, reflecting services (insurance coverage) provided to policyholders for each reporting period. Moreover, investment components paid to policyholders regardless of insurance events (surrender/maturity benefits) are excluded from insurance revenue, distinguishing insurance profits from investment profits for users to ascertain the source of profits.

KIFRS 1117 *Insurance Contracts*, enacted on April 23, 2021, applies to annual reporting periods beginning on or after January 1, 2023, replacing the current KIFRS 1104 *Insurance Contracts*. The Group has restated the consolidated financial statements for the year ended December 31, 2022 for comparative purposes by applying the transitional provisions of KIFRS 1117.

① Transition

As of the transition date, January 1, 2022, the Group identified, recognized, and measured each

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group of insurance contracts and reinsurance contracts, issued before the transition date, in accordance with the transitional provisions of KIFRS 1117 using the modified retrospective approach or fair value approach. Any existing balances that would not have existed if KIFRS 1117 had applied from the beginning were derecognized, with any resulting net adjustments recognized in equity.

② Classification of Insurance and Investment Contracts

The Group classifies contracts where one party (issuer) agrees to compensate the other party (policyholder) for adverse effects arising from specific uncertain future events (insurance events) as insurance contracts if significant insurance risk is transferred. Contracts not containing significant insurance risk, except investment contracts with discretionary participation features, are classified as investment contracts and accounted for under KIFRS 1109 *Financial Instruments*. Reinsurance contracts transferring significant insurance risk are also classified as insurance contracts.

③ Separation of Components in Insurance Contracts

The Group segregates the following components from insurance or reinsurance contracts and considers them as independent financial instruments:

- Derivative instruments included in contracts where economic characteristics and risks are not closely related to the main contract and contract terms do not satisfy the definition of insurance or reinsurance contracts as standalone executable instruments.
- Investment components having low correlation with insurance components and being similarly sellable or sold separately in the same market or jurisdiction under equivalent conditions.

After separating financial product components, the Group accounts for promises to transfer separate goods or services to policyholders as distinct contracts (i.e., non-insurance contracts) and treats them separately from insurance contracts. If policyholders can derive benefits independently or through other easily accessible resources, such benefits or services are considered separate. If cash flows and risks associated with goods or services are closely related to cash flows and risks associated with insurance components, the goods or services are not considered separate and they are accounted for alongside insurance components. The Group provides services that combine goods or services related to insurance products.

No insurance contracts sold by the Group are subject to the above accounting treatment that separates insurance components.

④ Level of Integration of Insurance Contracts

The Group identifies portfolios of insurance contracts, comprising contracts managed together due to similar risks, categorized as:

- onerous contracts at initial recognition;
- contracts unlikely to subsequently become onerous at initial recognition; and

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- remaining contracts in the portfolio.

Furthermore, each group of insurance contracts is divided by the year of issuance, indicating the level to which recognition and measurement accounting policies are applied. Groups are established at initial recognition and are not reassessed subsequently.

⑤ Insurance Contract Revenue

Insurance contract revenue excludes all investment components and is measured as follows:

(a) Contracts not measured under the Premium Allocation Approach

When fulfilling obligations under the group of insurance contracts by providing coverage or other services, the Group recognizes insurance revenue. For contracts not measured under the Premium Allocation Approach, insurance revenue associated with services provided in each period is the sum of changes in the liability for remaining coverage related to the services for which the Group expects to receive consideration.

Additionally, the Group systematically allocates a portion of insurance premiums related to recovering insurance acquisition cash flows over time and recognizes them as insurance revenue. The allocated amount is recognized as insurance revenue, while the same amount is recognized as insurance service expenses.

The insurance contract margin amount recognized as insurance revenue for the portfolio of insurance contracts is determined by identifying coverage units within the portfolio. The remaining insurance contract margin (pre-allocation amount) at the end of the period is evenly allocated to coverage units provided during the period and expected to be provided in the future. The insurance contract margin amount allocated to coverage units provided during the period is recognized as current period profit or loss. The number of coverage units represents the quantity of coverage provided under contracts within the portfolio, considering the quantity of benefits to be paid and the expected duration of coverage for each contract.

The Group does not disaggregate changes in non-financial risk adjustment between insurance service results and insurance finance income, and all changes are included in insurance service results.

(b) Contracts measured under the Premium Allocation Approach

For contracts measured under the Premium Allocation Approach, insurance revenue for each period is the expected premiums receivable for providing coverage during that period. The Group allocates expected premium receivables over the duration of each coverage period based on the passage of time.

⑥ Insurance Finance Revenue and Expenses

Insurance finance revenue and expenses consist of fluctuations in the carrying amounts of insurance and reinsurance contract groups due to the time value of money, financial risks, and their variations.

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The Group has chosen an accounting policy to present insurance finance income for the portfolios held by the Group separately between income recognized in profit or loss and accumulated other comprehensive income. The amounts included in profit or loss are allocated using a single rate to the total expected insurance finance revenue and expenses over the remaining duration of the portfolio. For products where changes in financial risk assumptions have a substantial impact on amounts paid to policyholders (Indirect Par products), the modified remaining expected finance income (expense) over the remaining duration of the portfolio is allocated using the modified single rate reflecting the adjustment for each reporting period (Effective Interest Rate method).

⑦ Insurance Service Expenses

The following insurance service expenses arising from issued insurance contract groups are recognized in profit or loss:

- incurred insurance claims (excluding investment components) and other incurred insurance service expenses;
- amortization of insurance acquisition cash flows;
- fluctuations related to past services, i.e., variations in cash flows for fulfillment associated with incurred claims liabilities; and
- fluctuations related to future services, i.e., losses on loss-making contract portfolios and their reversals.

⑧ Foreign Currency Insurance Contracts

Monetary assets and liabilities denominated in foreign currencies are recognized in the functional currency using the exchange rates at the reporting date. Non-monetary assets and liabilities measured at fair value in foreign currency are translated into the functional currency using the exchange rates determined at the date when fair value was determined. Non-monetary items denominated in foreign currency, measured at historical cost, are translated using the exchange rates at the transaction date. Fluctuations in foreign currency-denominated insurance contracts and reinsurance contracts, pertaining to insurance revenue and expenses, are translated using the average exchange rates, while year-end balances are translated into the functional currency using the exchange rates at the reporting date.

⑨ Insurance Acquisition Cash Flows

Insurance acquisition cash flows represent the cash flows arising from the sales, underwriting, and commencement-related costs directly attributable to insurance contract portfolios to which groups of insurance contract belong. It includes cash flows not directly attributable to individual contracts or insurance contract groups within the portfolio.

⑩ Insurance Contract Assets and Liabilities

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(a) Initial Recognition

The Group recognizes insurance contract groups at the earliest of the following points:

- When the coverage period of the a insurance contract group commences. The insurance period is the period during which the insurance contract group compensates for insured events in relation to all premiums within the scope of the insurance contract.
- When the first premium becomes payable by the policyholder within the group. If there is no contractual due date for payment, the date when the first premium is received from the policyholders is considered as the due date.
- The date when facts and circumstances indicate the group is liable for incurred losses.

For proportional reinsurance contracts where the Group provides proportional coverage, the commencement date of the coverage period of the reinsurance contract portfolio and the initial recognition date of the ceding contracts are recognized at the later date, and in all other cases, at the commencement date of the coverage period of the reinsurance contract portfolio. The coverage period is the period during which the Group receives insurance claims arising from the reinsurance portion of the underlying insurance contracts.

If all contracts within the portfolio are issued or commenced in the same year subsequently, new contracts are added to the same portfolio when issued or commenced, and the insurance contract portfolio is recognized at the acquisition date.

(b) Measurement

The measurement of the portfolio includes all future cash flows within each contract boundary of the portfolio, and cash flows arise from actual rights and obligations existing during the reporting period where the Group is compelled to pay premiums to the policyholders or provide services. The boundary of the contracts is re-evaluated at each reporting date and may change over time.

The obligation to provide services terminates under the following circumstances, and the contract boundary is re-evaluated at each reporting date and may change over the period:

- The Group possesses the actual ability to re-evaluate risks for specific policyholders and can set remunerations or levels of payment fully reflecting the reassessed risks; and
- The Group possesses the actual ability to re-evaluate risks for the portfolio containing the contract and can set earnings at a level fully reflecting the risks of the portfolio. The pricing of premiums until the reassessment date does not consider risks associated with periods after the reassessment date.

(b-1) Initial Measurement

At the initial recognition, the Group measures insurance contracts as the sum of:

- Estimated cash flows for future periods, adjusted for financial risks and the time value of

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money, and adjusted for non-financial risk through risk adjustments for future cash flows and

Insurance contract margins.

The measurement of cash flows for the coverage period of insurance contract portfolios does not reflect non-performance risk, and insurance acquisition cash flows paid by the enterprise before recognition of related portfolio are recognized as insurance contract assets. Once the portfolio of contracts is recognized, these cash flows are included in the measurement of the portfolio, and previously recognized assets are derecognized.

The adjustment for non-financial risk of insurance contract portfolios represents compensation needed to account for uncertainty in the amount and timing of cash flows arising from non-financial risks. The insurance contract margin of insurance contract portfolios represents the expected future profits that the enterprise expects to recognize as it provides services under such contracts. If the sum of the cash flows for future periods at the initial recognition date, the cash flows occurring at that date, and the cash flows for insurance acquisition excluded from recognition is a net inflow amount, the portfolio does not incur losses. In this case, the insurance contract margin is measured as the same amount as the net inflow, but with the opposite sign, so there are no revenue or expense recognized at the initial recognition.

For portfolios of contracts acquired through business combinations, consideration received for contracts is included in the cash flows for future periods as a substitute for premiums received on the acquisition date. The consideration received in business combinations represents the fair value of the contracts acquired. If the sum of cash flows is a net outflow, the portfolio is classified as a loss-bearing portfolio. In such cases, the net cash outflow is recognized as a loss in the income statement, or if contracts are acquired through business combinations, it is recognized as an adjustment to goodwill or as a bargain purchase gain on the acquisition of contracts. The loss component is determined to represent the amount recognized in profit or loss for the loss incurred by the loss-bearing portfolio.

(b-2) Subsequent Measurement

The carrying amount of insurance contracts at the end of the reporting period consists of the sum of the residual insurance liability and the incurred claims liability. The liability for the residual coverage comprises (a) future cash flows related to services to be provided under contracts in future periods and (b) the residual insurance contract margin at that date, while the incurred claims liability consists of cash flows for insurance claims and expenses incurred but not yet reported or paid. The cash flows for the coverage period of insurance contract portfolios are measured at the reporting date using the present value of future cash flows, current discount rates, and current estimates of risk adjustments for non-financial risk.

(c) Contracts subject to the Premium Allocation Approach

The Group applies the premium allocation approach to contract portfolios that meet the following conditions:

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- it is reasonably expected that the measurement outcomes under the premium allocation approach will not be significantly different from those under the general model; and
- the coverage period of each contract included in the contract portfolio is one year or less.

At the initial recognition of each contract portfolio, the carrying amount of the residual insurance liability is measured by deducting insurance acquisition cash flows received at the initial recognition date from the premiums received. The insurance acquisition cash flows for auto insurance are recognized as expenses when incurred, without deducting from the carrying amount of the residual insurance liability.

Subsequently, the carrying amount of the residual insurance liability increases due to premiums received and decreases due to amounts recognized as insurance revenue for provided coverage. The Group expects that the difference between the timing of providing insurance components and the premium due date for each contract at the initial recognition of each portfolio will be within one year. Therefore, the Group has decided not to adjust the residual insurance liability to reflect the effects of the time value of money and financial risks. The Group recognizes incurred claims liability for insurance contract portfolios based on cash flows incurred for incurred claims, discounted to present value.

(d) Derecognition

In the event that a contract expires (i.e., the obligations specified in the insurance contract are fulfilled, expired, or cancelled), the Group derecognizes the insurance contract. To remove the rights and obligations removed from the portfolio and adjust for the removal of the present value of future cash flows and the risk adjustment for non-financial risks associated with those rights and obligations, the Group adjusts the cash flows allocated to the portfolio and adjusts the insurance contract margin unless it is a loss-bearing contract.

⑪ Reinsurance Contracts

The accounting policies applied to reinsurance contracts are modified as follows:

(a) Initial Recognition

Upon initial recognition, the insurance contract service margin for the reinsurance contract portfolio represents the net cost or profit from reinsurance purchases. The amount is measured as the total amount of cash flows removed for periods before portfolio recognition, which is equal and opposite in sign to the total amount of cash flows incurred on the same date. However, if the net cost of purchasing reinsurance cover relates to insurance events occurring before the acquisition of that portfolio, the Group recognizes the expense immediately in profit or loss. Reinsurance contracts cannot be loss-bearing contracts. The risk adjustment for non-financial risks represents the amount of risk transferred to the reinsurer by the entity.

(b) Measurement

The carrying amount of the reinsurance contract portfolio as of each reporting date comprises the

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aggregate of the residual coverage and incurred claim components. The residual coverage consists of (a) future cash flows related to services to be provided under the contracts and (b) the residual insurance contract service margin at that point in time. The Group measures the present value of future cash flows using assumptions consistent with those used to measure the present value of future cash flows of the underlying insurance contracts and adjusts for non-performance risk. The impact of non-performance risk is assessed at each reporting period, and the effect of changes in non-performance risk is recognized in profit or loss.

(c) Contracts Subject to Premium Allocation Approach

The Group applies the premium allocation approach to treaty reinsurance contracts that meet the following conditions:

- it is reasonably expected that the measurement results under the premium allocation approach will not be significantly different from those under the general model; and
- the coverage period of each contract included in the reinsurance contract portfolio is one year or less.

The initial application of KIFRS 1117 "*Insurance Contracts*" resulted in the following effects on the consolidated financial statements and the consolidated statement of comprehensive income as of December 31, 2022:

Under the application of KIFRS 1117, the consolidated assets, consolidated liabilities, and consolidated equity as of December 31, 2022, are KRW 196,976,926 million, KRW 163,801,018 million, and KRW 33,175,908 million, respectively. The consolidated profit for the year and consolidated comprehensive income are KRW 2,008,961 million and KRW 6,280,292 million, respectively. Compared to KIFRS 1104, the consolidated assets, consolidated liabilities, and consolidated equity increased (decreased) by KRW (-)14,198,398 million, KRW (-)26,495,479 million, and KRW 12,297,081 million, respectively. Additionally, the consolidated profit for the year and consolidated comprehensive income increased (decreased) by KRW (-)234,376 million and KRW 9,299,823 million, respectively.

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- Consolidated Statements of Financial Position as of December 31, 2022

<i>(in millions of Korean won)</i>	KIFRS 1104	KIFRS 1117	Inc(Dec)
Assets			
Current assets			
Cash and cash equivalents	₩ 6,673,028	₩ 6,673,028	₩ -
Financial assets at fair value through profit or loss	5,946	5,946	-
Financial assets at fair value through other comprehensive income	500	500	-
Financial assets at amortized cost	68	68	-
Other financial assets	861,747	861,747	-
Trade and other receivables	4,962,880	4,962,880	-
Other current assets	3,133,548	3,097,351	(36,197)
Inventories	6,557,534	6,557,534	-
Current tax assets	33,803	33,803	-
Assets held for sale (included assets of disposal group)	124,147	124,147	-
	<u>22,353,201</u>	<u>22,317,004</u>	<u>(36,197)</u>
Non-current assets			
Financial assets at fair value through profit or loss	700,441	700,441	-
Financial assets at fair value through other comprehensive income	472,345	472,345	-
Other financial assets	442,756	442,756	-
Trade and other receivables	396,086	396,086	-
Investments in associates and joint venture	3,967,508	3,967,508	-
Investment property	1,970,935	1,970,935	-
Property, plant and equipment	15,852,298	15,852,298	-
Right-of-use assets	610,870	610,870	-
Intangible assets	4,101,230	4,101,230	-
Other non-current assets	481,734	481,734	-
Deferred tax assets	539,017	539,017	-
	<u>29,535,220</u>	<u>29,535,220</u>	<u>-</u>
Assets for financial business			
Cash and cash equivalents	2,542,671	2,923,167	380,496
Insurance contract assets	-	833,743	833,743
Financial assets at fair value through profit or loss	31,181,201	45,276,907	14,095,706
Financial assets at fair value through other comprehensive income	31,525,161	36,438,736	4,913,575
Financial assets at amortized cost	55,224,262	48,721,939	(6,502,323)
Investments in associates and joint venture	534,736	534,736	-
Investment property	1,740,618	1,740,618	-
Property, plant and equipment	3,324,717	3,324,717	-
Right-of-use assets	242,672	242,672	-
Intangible assets	423,543	423,543	-
Derivative financial assets	965,980	1,007,318	41,338
Current tax assets	194,582	236,492	41,910
Deferred tax assets	2,857,955	1,113,900	(1,744,055)
Other financial assets	2,399,130	2,162,606	(236,524)
Other assets	3,733,845	143,608	(3,590,237)
Separate account assets	22,395,830	-	(22,395,830)
	<u>159,286,903</u>	<u>145,124,702</u>	<u>(14,162,201)</u>
Total assets	<u>₩ 211,175,324</u>	<u>₩ 196,976,926</u>	<u>₩ (14,198,398)</u>

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Liabilities

Current liabilities

Trade and other payables	₩ 4,149,014	₩ 4,149,014	₩ -
Borrowings and debentures	8,305,473	8,305,473	-
Other financial liabilities	1,512,974	1,512,974	-
Provisions	282,237	282,237	-
Other current liabilities	6,209,450	6,209,450	-
Current tax liabilities	635,483	635,483	-
	<u>21,094,631</u>	<u>21,094,631</u>	<u>-</u>

Non-current liabilities

Trade and other payables	415,370	415,370	-
Borrowings and debentures	8,067,264	8,067,264	-
Other financial liabilities	1,640,192	1,640,192	-
Net defined benefit liabilities	1,546,484	1,546,484	-
Provisions	336,097	336,097	-
Other non-current liabilities	1,198,512	1,198,512	-
Deferred tax liabilities	1,527,169	1,296,922	(230,247)
	<u>14,731,088</u>	<u>14,500,841</u>	<u>(230,247)</u>

Liabilities for financial business

Withheld liabilities	1,986,810	1,986,810	-
Insurance contract liabilities	111,098,238	105,388,267	(5,709,971)
Policyholder's equity adjustments	58,357	133,520	75,163
Current tax liabilities	129,464	129,464	-
Deferred tax liabilities	492,375	2,960,530	2,468,155
Derivative financial liabilities	2,295,237	2,306,919	11,682
Net defined benefit liabilities	212,841	212,841	-
Provisions	170,226	170,226	-
Other financial liabilities	14,860,037	14,800,191	(59,846)
Other liabilities	218,667	116,778	(101,889)
Separate account liabilities	22,948,526	-	(22,948,526)
	<u>154,470,778</u>	<u>128,205,546</u>	<u>(26,265,232)</u>
Total liabilities	<u>190,296,497</u>	<u>163,801,018</u>	<u>(26,495,479)</u>

Equity

Share capital	489,550	489,550	-
Capital surplus	978,371	1,338,136	359,765
Capital adjustments	44,292	43,806	(486)
Accumulated other comprehensive loss	(2,957,045)	1,168,146	4,125,191
Retained earnings	6,673,349	7,773,529	1,100,180
Equity attributable to owners of the Parent Company	<u>5,228,517</u>	<u>10,813,167</u>	<u>5,584,650</u>
Non-controlling interest	<u>15,650,310</u>	<u>22,362,741</u>	<u>6,712,431</u>
Total equity	<u>20,878,827</u>	<u>33,175,908</u>	<u>12,297,081</u>
Total liabilities and equity	<u>₩ 211,175,324</u>	<u>₩ 196,976,926</u>	<u>₩ (14,198,398)</u>

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- Consolidated Statements of Comprehensive Income for the year ended December 31, 2022

<i>(in millions of Korean won)</i>	KIFRS 1104	KIFRS 1117	Inc(Dec)
Revenue			
Revenue from non-financial business	₩ 28,568,270	₩ 28,568,270	₩ -
Revenue from financial business	33,734,421	22,318,461	(11,415,960)
Adjustment amount for profit or loss (Overlay Adjustment)	<u>(24,296)</u>	<u>-</u>	<u>24,296</u>
	<u>62,278,395</u>	<u>50,886,731</u>	<u>(11,391,664)</u>
Cost of sales			
Cost of sales from non-financial business	23,732,884	23,736,412	3,528
Cost of sales from financial business	33,316,857	21,350,711	(11,966,146)
Adjustment amount for profit or loss (Overlay Adjustment)	<u>(684,813)</u>	<u>-</u>	<u>684,813</u>
	<u>56,364,928</u>	<u>45,087,123</u>	<u>(11,277,805)</u>
Gross profit	5,913,467	5,799,608	(113,859)
 Selling and administrative expenses	 <u>3,397,376</u>	 <u>3,429,970</u>	 <u>32,594</u>
Operating profit	2,516,091	2,369,638	(146,453)
 Other income	 2,449,855	 2,446,190	 (3,665)
Other expenses	2,186,811	2,175,239	(11,572)
Finance income	120,375	116,794	(3,581)
Finance costs	547,445	547,445	-
Share of net loss of associates and joint venture	<u>(76,020)</u>	<u>(76,020)</u>	<u>-</u>
Profit before income tax	2,276,045	2,133,918	(142,127)
Income tax expense	<u>32,708</u>	<u>124,957</u>	<u>92,249</u>
 Profit for the year			
Owners of the Parent Company	₩ 1,312,180	₩ 1,174,434	₩ (137,746)
Non-controlling interests	<u>931,157</u>	<u>834,527</u>	<u>(96,630)</u>
	<u>₩ 2,243,337</u>	<u>₩ 2,008,961</u>	<u>₩ (234,376)</u>
Other comprehensive loss			
<i>Items that may be reclassified subsequently to profit or loss</i>	(8,221,034)	(7,610,672)	610,362
Loss on valuation of debt instruments at fair value through other comprehensive income	₩ (7,077,957)	₩ (7,147,768)	₩ (69,811)
Share in other comprehensive income (loss) of associates	188,080	188,234	154
Gain (loss) on valuation of derivatives qualifying cash flow hedge	(697,706)	(675,833)	21,873
Overseas business translation	24,276	24,695	419
Other comprehensive income of separate accounts	(273,651)	-	273,651
Adjustment amount for profit or loss (Overlay Adjustment)	(384,076)	-	384,076
<i>Items that will not be reclassified to profit or loss</i>	2,958,166	11,882,003	8,923,837
Remeasurements of net defined benefit liability	126,398	129,251	2,853
Loss on valuation of equity instruments at fair value through other comprehensive income	(221,476)	(285,678)	(64,202)
Loss on valuation of financial liabilities at fair value through profit or loss	(118)	(121)	(3)
Income on insurance finance	-	9,021,796	9,021,796
Surplus on revaluation of assets	<u>3,053,362</u>	<u>3,016,755</u>	<u>(36,607)</u>
Other comprehensive loss for the year, net of tax	<u>(5,262,868)</u>	<u>4,271,331</u>	<u>9,534,199</u>

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Total comprehensive income for the year

Owners of the Parent Company	(772,574)	3,377,689	4,150,263
Non-controlling interests	(2,246,957)	2,902,603	5,149,560
	<u>₩ (3,019,531)</u>	<u>₩ 6,280,292</u>	<u>₩ 9,299,823</u>

- Changes in equity of the Group as of the transition date of January 1, 2022, arising from the adoption of KIFRS 1117, are as follows:

(in millions of Korean won)	Retained earnings	Accumulated other comprehensive income (loss)	Others	Total
Balance as of January 1, 2022, before accounting policy changes	₩ 5,332,223	₩ (806,368)	₩ 17,454,795	₩ 21,980,650
Changes resulting from accounting policy changes	<u>1,235,072</u>	<u>(159,964)</u>	<u>1,625,196</u>	<u>2,700,304</u>
Balance as of January 1, 2022 after accounting policy changes	<u>₩ 6,567,295</u>	<u>₩ (966,332)</u>	<u>₩ 19,079,991</u>	<u>₩ 24,680,954</u>

- Meanwhile, the Group adopted KIFRS 1109, '*Financial Instruments*,' for the reporting periods before the initial adoption of KIFRS 1117. Applying the transition provisions of KIFRS 1117, the Group reclassified financial assets for the reporting period beginning on or after January 1, 2023. Details of changes in the Group's equity resulting from the reclassification are as follows:

(in millions of Korean won)	Accumulated other comprehensive income (loss)	Retained earnings	Non-controlling interests	Total
Balance as of January 1, 2023, before accounting policy changes	₩ 1,168,146	₩ 7,773,529	₩ 22,362,741	₩ 31,304,416
Changes resulting from accounting policy changes	<u>491,874</u>	<u>(506,795)</u>	<u>(37,551)</u>	<u>(52,472)</u>
Balance as of January 1, 2023, after accounting policy changes	<u>₩ 1,660,020</u>	<u>₩ 7,266,734</u>	<u>₩ 22,325,190</u>	<u>₩ 31,251,944</u>

- Definition of Accounting Estimates - Amendments to KIFRS 1008

The amendments to KIFRS 1008 clarify the distinction between changes in accounting estimates, changes in accounting policies and the correction of errors. They also clarify how entities use measurement techniques and inputs to develop accounting estimates. The amendments had no impact on the Group's consolidated financial statements.

- Disclosure of Accounting Policies - Amendments to KIFRS 1001

The amendments to KIFRS 1001 *Making Materiality Judgements* provide guidance and examples to help entities apply materiality judgements to accounting policy disclosures. The amendments aim to help entities provide accounting policy disclosures that are more useful by replacing the requirement for entities to disclose their 'significant' accounting policies with a requirement to disclose their 'material' accounting policies and adding guidance on how entities apply the concept

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of materiality in making decisions about accounting policy disclosures.

The amendments have had an impact on the Group's disclosures of accounting policies, but not on the measurement, recognition or presentation of any items in the Group's financial statements.

- Deferred Tax related to Assets and Liabilities arising from a Single Transaction – Amendments to KIFRS 1012

The amendments to KIFRS 1012 *Income Tax* narrow the scope of the initial recognition exception, so that it no longer applies to transactions that give rise to equal taxable and deductible temporary differences such as leases and decommissioning liabilities.

The amendments had no impact on the Group's consolidated financial statements.

- International Tax Reform—Pillar Two Model Rules – Amendments to KIFRS 1012

The amendments to KIFRS 1012 have been introduced in response to the OECD's BEPS Pillar Two Model Rules and include:

- a mandatory temporary exception to the recognition and disclosure of deferred taxes arising from the jurisdictional implementation of the Pillar Two Model Rules; and
- disclosure requirements for affected entities to help users of the financial statements better understand an entity's exposure to Pillar Two income taxes arising from that legislation, particularly before its effective date.

The mandatory temporary exception – the use of which is required to be disclosed – applies immediately. The remaining disclosure requirements apply for annual reporting periods beginning on or after January 1, 2023, but not for any interim periods ending on or before December 31, 2023. The amendments had no material impact on the Group's consolidated financial statements.

2.3 New standards and interpretations not yet adopted by the Group

The following new accounting standards and interpretations have been published but not yet effective:

- Amendments to KIFRS 1001: Classification of Liabilities as Current or Non-current

The amendments to paragraphs 69 to 76 of KIFRS 1001 specify the requirements for classifying liabilities as current or non-current. The amendments clarify:

- what is meant by a right to defer settlement;
- that a right to defer must exist at the end of the reporting period;
- that classification is unaffected by the likelihood that an entity will exercise its deferral right; and

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- that only if an embedded derivative in a convertible liability is itself an equity instrument would the terms of a liability not impact its classification.

In addition, a requirement has been introduced to require disclosure when a liability arising from a loan agreement is classified as non-current and the entity's right to defer settlement is contingent on compliance with future covenants within twelve months.

The amendments are effective for annual reporting periods beginning on or after January 1, 2024 and must be applied retrospectively. The Group is currently assessing the impact the amendments will have on current practice and whether existing loan agreements may require renegotiation.

- *Supplier Finance Arrangements - Amendments to KIFRS 1007 and KIFRS 1107*

The amendments to KIFRS 1007 *Statement of Cash Flows* and KIFRS 1107 *Financial Instruments: Disclosures* clarify the characteristics of supplier finance arrangements and require additional disclosure of such arrangements. The disclosure requirements in the amendments are intended to assist users of financial statements in understanding the effects of supplier finance arrangements on an entity's liabilities, cash flows and exposure to liquidity risk.

The amendments will be effective for annual reporting periods beginning on or after January 1, 2024. Early adoption is permitted, but will need to be disclosed.

The amendments are not expected to have a material impact on the Group's consolidated financial statements.

- *Amendments to KIFRS 1116: Lease Liability in a Sale and Leaseback*

The amendments to KIFRS 1116 specify the requirements that a seller-lessee uses in measuring the lease liability arising in a sale and leaseback transaction, to ensure the seller-lessee does not recognise any amount of the gain or loss that relates to the right of use it retains.

The amendments are effective for annual reporting periods beginning on or after January 1, 2024 and must be applied retrospectively to sale and leaseback transactions entered into after the date of initial application of KIFRS 1116. Earlier application is permitted and that fact must be disclosed.

The amendments are not expected to have a material impact on the Group's consolidated financial statements.

- *Amendments to KIFRS 1001 Presentation of Financial Statements - Disclosure of Virtual Assets*

These amendments mandate entities to disclose material information for the financial statement users such as the impact of holding and issuing virtual assets on their accounting policies and financial statements. The entities should separately disclose information related to holding virtual assets, holding them on behalf of the customers, and issuing them. The amendments will be effective for annual reporting periods beginning on or after January 1, 2024 and shall be applied retrospectively. The amendments are not expected to have a material impact on the Group's consolidated financial statements as the Group neither holds nor issues virtual assets.

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- *Lack of Exchangeability - Amendments to KIFRS 1021 and KIFRS 1101*

The amendments to KIFRS 1021 *The Effects of Changes in Foreign Exchange Rates* and consequential amendments to KIFRS 1101 *First-time Adoption of KIFRS* specify how an entity should assess whether a currency is exchangeable and how it should determine a spot exchange rate when exchangeability is lacking. The amendments require disclosure of information that enables users of financial statements to understand the risk and impact of a currency not being exchangeable.

The amendments apply to annual reporting periods beginning on or after January 1, 2025. Earlier application is permitted, in which case, an entity is required to disclose that fact. The amendments are not expected to have a material impact on the Group's consolidated financial statements.

2.4 Consolidation

The Group has prepared the consolidated financial statements in accordance with KIFRS 1110 *Consolidated Financial Statements*.

(1) Subsidiaries

Subsidiaries are all entities over which the Group has control. The Group controls an entity when the Group 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 to direct the activities of the entity. Subsidiaries are fully consolidated from the date on which control is transferred to the Group. They are deconsolidated from the date that control ceases.

The acquisition method of accounting is used to account for business combinations by the Group. The consideration transferred is measured at the fair values of the assets transferred, and identifiable assets acquired and liabilities and contingent liabilities assumed in a business combination are measured initially at their fair values at the acquisition date. The Group recognizes any non-controlling interest in the acquired entity on an acquisition-by-acquisition basis either at fair value or at the non-controlling interest's proportionate share of the acquired entity's net identifiable assets. All other non-controlling interests are measured at fair values, unless otherwise required by other standards. Acquisition-related costs are expensed as incurred.

The excess of consideration transferred, amount of any non-controlling interest in the acquired entity and acquisition-date fair value of any previous equity interest in the acquired entity over the fair value of the net identifiable assets acquired is recorded as goodwill. If those amounts are less than the fair value of the net identifiable assets of the business acquired, the difference is recognized directly in the profit or loss as a bargain purchase.

Intercompany transactions, balances and unrealized gains on transactions between group companies are eliminated. Unrealized losses are also eliminated unless the transaction provides evidence of an impairment of the transferred asset. Accounting policies of subsidiaries have been changed where necessary to ensure consistency with the policies adopted by the Group.

The Group treats transactions with non-controlling interests that do not result in a loss of control as

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transactions with equity owners of the Group. A change in ownership interest results in an adjustment between the carrying amounts of the controlling and non-controlling interest to reflect their relative interest in the subsidiary. Any difference between the amount of the adjustment to non-controlling interest and any consideration paid or received is recognized in a separate reserve within equity attributable to owners of the Parent Company.

When the Group ceases to consolidate for a subsidiary because of a loss of control, any retained interest in the subsidiary is remeasured to its fair value with the change in carrying amount recognized in profit or loss.

(2) Associates

Associates are entities over which the Group has significant influence but not control or joint control. Investments in associates are accounted for using the equity method of accounting, after initially being recognized at cost. Unrealized gains on transactions between the Group and its associates are eliminated to the extent of the Group's interest in the associates. If the Group's share of losses of an associate equals or exceeds its interest in the associate (including long-term interests that, in substance, form part of the Group's net investment in the associate), the Group discontinues recognizing its share of further losses. After the Group's interest is reduced to zero, additional losses are provided for, and a liability is recognized, only to the extent that the Group has incurred legal or constructive obligations or made payments on behalf of the associate. If there is an objective evidence of impairment for the investment in the associate, the Group recognizes the difference between the recoverable amount of the associate and its book amount as impairment loss. If an associate uses accounting policies other than those of the Group for like transactions and events in similar circumstances, if necessary, adjustments shall be made to make the associate's accounting policies conform to those of the Group when the associate's financial statements are used by the Group in applying the equity method.

(3) Joint Arrangements

A joint arrangement, wherein two or more parties have joint control, is classified as either a joint operation or a joint venture. A joint operator recognizes its direct right to the assets, liabilities, revenues and expenses of joint operations and its share of any jointly held or incurred assets, liabilities, revenues and expenses. Interests in joint ventures are accounted for using the equity method, after initially being recognized at cost in the consolidated statement of financial position.

(4) Business Combination

Acquisitions of businesses are accounted for using the acquisition method. The consideration transferred in a business combination is measured at fair value, which is calculated as the sum of the fair values of the assets transferred by the Group, the liabilities incurred by the Group to the former owners of the acquiree and the equity interests issued by the Group in exchange for control of the acquiree. Acquisition-related costs are generally recognized in profit or loss as incurred.

At the acquisition date, the identifiable assets acquired and liabilities and contingent liabilities assumed are recognized at their fair value at the acquisition date, except that:

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- deferred tax assets or liabilities and liabilities or assets related to employee benefit arrangements are recognized and measured in accordance with KIFRS 1012 and KIFRS 1019, respectively;
- liabilities or equity instruments related to share-based payment arrangements of the acquiree or share-based payment arrangements of the Group entered into to replace share-based payment arrangements of the acquiree are measured in accordance with KIFRS 1102 at the acquisition date; or
- assets (or disposal groups) that are classified as held for sale in accordance with KIFRS 1105 are measured in accordance with that standard.

Goodwill is measured as the excess of the sum of: 1) the consideration transferred and 2) the fair value of the acquirer's previously held equity interest in the acquiree (if any) over the net of the acquisition-date amounts of the identifiable assets acquired and the liabilities assumed. If, after reassessment, the net of the acquisition-date amounts of the identifiable assets acquired and the liabilities assumed exceeds the sum of: 1) the consideration transferred and 2) the fair value of the acquirer's previously held interest in the acquiree (if any), the excess is recognized immediately in profit or loss as a bargain purchase.

When the consideration transferred by the Group in a business combination includes assets or liabilities resulting from a contingent consideration arrangement, the contingent consideration is measured at its acquisition-date fair value and included as part of the consideration transferred in a business combination. Changes in the fair value of the contingent consideration that qualify as measurement-period adjustments are adjusted retrospectively, with corresponding adjustments against goodwill. Measurement-period adjustments are adjustments that arise from additional information obtained during the 'measurement period' (which cannot exceed one year from the acquisition date) about facts and circumstances that existed at the acquisition date.

The subsequent accounting for changes in the fair value of the contingent consideration that do not qualify as measurement-period adjustments depends on how the contingent consideration is classified. Contingent consideration that is classified as equity is not remeasured at subsequent reporting dates and its subsequent settlement is accounted for within equity. Contingent consideration that is classified as an asset or a liability is remeasured at subsequent reporting dates, with the corresponding gain or loss being recognized in profit or loss.

When a business combination is achieved in stages, the Group's previously held equity interest in the acquiree is remeasured to fair value at the acquisition date and the resulting gain or loss, if any, is recognized in profit or loss (if applicable, other comprehensive income). Amounts arising from interests in the acquiree prior to the acquisition date that have previously been recognized in other comprehensive income are reclassified to profit or loss where such treatment would be appropriate if those interests were disposed of.

If the initial accounting for a business combination is incomplete by the end of the reporting period in which the combination occurs, the Group reports provisional amounts for the items for which the accounting is incomplete. Those provisional amounts are adjusted during the measurement period (see above), or additional assets or liabilities are recognized, to reflect new information obtained

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about facts and circumstances that existed at the acquisition date that, if known, would have affected the amounts recognized at that date.

(5) Non-controlling interests

Non-controlling interests in a subsidiary are accounted for separately from the Parent Company's ownership interests in a subsidiary. Each component of net profit or loss and other comprehensive income is attributed to the owners of the Parent Company and non-controlling interest holders, even when the allocation reduces the non-controlling interest balance below to zero.

Meanwhile, non-controlling interests arising from collective investment securities and special purpose entities in consolidation are recognized as borrowing liabilities as the Group holds no unconditional right to avoid payments to counterparties in the event of liquidation of such securities. The variation of borrowing liability is recognized as profit or loss for the year.

2.5 Goodwill

Goodwill arising from a business combination is recognized by deducting the accumulated impairment loss from the cost at the time of acquisition (the acquisition date).

For the purpose of impairment testing, goodwill is allocated to each of the Group's cash-generating units ("CGUs") (or group of CGUs) that is expected to benefit from the synergies of the combination.

A CGU to which goodwill has been allocated is tested for impairment annually or more frequently when there is an indication that the unit may be impaired. If the recoverable amount of the CGU is less than its carrying amount, the impairment loss is allocated first to reduce the carrying amount of any goodwill allocated to the unit and then to other assets of the unit on a pro rata basis based on the carrying amount of each asset in the unit. Any impairment loss for goodwill is recognized directly in profit or loss. An impairment loss recognized for goodwill is not reversed in subsequent periods.

On disposal of the relevant CGU, the attributable amount of goodwill is included in the determination of the profit or loss on disposal.

2.6 Share-based Payments

The Group operates equity-settled and cash-settled share-based payment transactions as a consideration for employee services received. The share-based payments are recognized at fair value of equity instruments granted, and employee benefit expense is recognized over the vesting period. Under cash-settled share-based payment plan, the Group measures liabilities for the consideration for employee services received at fair value at initial recognition. The Group is required to remeasure the fair value of the liability at the end of each reporting period, with any changes in value recognized in profit or loss for the year.

2.7 Revenue Recognition

The Group has applied KIFRS 1115. According to KIFRS 1115, all types of contracts are recognized by applying a five-step revenue recognition model (① Contract Identification — ② Performance

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Obligations Identification — ③ Transaction Price Calculation — ④ Transaction Price Allocations to Performance Obligations — ⑤ Revenue Recognition When Satisfied with Performance Obligations).

(1) Identify performance obligations

1. Point in time

The Group recognizes revenue when the goods or services are transferred to the customer. In addition, the Group exports a variety of finished goods or merchandises by Incoterms Group C condition (CIF and others). Since the seller provides logistics service after passing the control to the customer, the Group identifies the relative logistics service (including insurance) as separate performance obligation.

2. Over time

Under KIFRS 1115, if performance obligations satisfy one or more of the three conditions of paragraph 35, performance obligations would be identified as over-time, otherwise as point in time. The time of revenue recognition can be changed if the Group's performance obligations satisfy the three conditions of paragraph 35.

(2) Allocate transaction price

The Group allocates the transaction price to the separate performance obligations in one contract based on the relative stand-alone selling price of each separate performance obligation. For estimating stand-alone selling price of each performance obligation, the Group uses the method of 'expected cost plus a margin approach', 'market valuation adjustment approach' and others.

(3) Variable transaction price

The price the customer promises in accordance with the contract of sale of the goods with the customer may change. In accordance with KIFRS 1115, the variable cost is estimated using a method that expects to be able to better anticipate the consideration to be entitled to the right to receive the expected or probable price of the right to receive the right. It recognizes revenue by including the variable price in the transaction price only to the extent that it is highly unlikely that it will carry out a significant portion of the cumulative revenue amount that has already been recognized.

(4) Insurance premium

Insurance premiums received in advance are deferred as unearned revenue at the time of receipt. As the contract matures, a proportionate portion of the insurance premium is recognized as revenue over the coverage period. Overdue insurance premiums are not recognized at the end of the reporting period.

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(5) Interest income

Interest income is recognized using the effective interest method according to the time passed. The effective interest method is a method of calculating the amortized cost of a financial asset or a financial liability and of allocating the interest income or interest expense over the relevant period.

The effective interest rate is the rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial instrument or, when appropriate, a shorter period to the net carrying amount of the financial asset or financial liability. When calculating the effective interest rate, an entity shall estimate cash flows considering all contractual terms of the financial instrument but shall not consider future credit losses. The calculation includes all fees and points paid or received between parties to the contract that are an integral part of the effective interest rate, transaction costs, and all other premiums or discounts. There is a presumption that the cash flows and the expected life of a group of similar financial instruments can be estimated reliably. However, in those rare cases when it is not possible to estimate reliably the cash flows or the expected life of a financial instrument, the Group uses the contractual cash flows over the full contractual term of the financial instrument.

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

(6) Dividend income

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

2.8 Leases

(1) Lessee accounting

The Group leases various offices, warehouses and cars. Lease contracts are typically made for fixed periods of 1 to 10 years, but may have extension options as described in (2) below.

Contracts may contain both lease and non-lease components. However, the Group applies the practical expedient which has elected not to separate non-lease components from lease components, and instead account for each lease component and any associated non-lease components as a single lease component.

Lease terms are negotiated on an individual basis and contain a wide range of different terms and conditions. The lease agreements do not impose any covenants, but leased assets may not be used as security for borrowing purposes.

The Group determines the lease term as the non-cancellable period of a lease, together with both (a) periods covered by an option to extend the lease if the lessee is reasonably certain to exercise that option; and (b) periods covered by an option to terminate the lease if the lessee is reasonably certain not to exercise that option. When the lessee and the lessor each has the right to terminate the lease without permission from the other party, the Group should consider a termination penalty

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in determining the period for which the contract is enforceable.

Assets and liabilities arising from a lease are initially measured on a present value basis. Lease liabilities include the net present value of the following lease payments:

- fixed payments (including in-substance fixed payments), less any lease incentives receivable;
- variable lease payment that are based on an index or a rate, initially measured using the index or rate as of the commencement date;
- amounts expected to be payable by the Group (the lessee) under residual value guarantees;
- the exercise price of a purchase option if the Group (the lessee) is reasonably certain to exercise that option; and
- payments of penalties for terminating the lease, if the lease term reflects the Group (the lessee) exercising that option.

Lease payments to be made under reasonably certain extension options are also included in the measurement of the lease liability.

The lease payments are discounted using the interest rate implicit in the lease. If that rate cannot be determined, the lessee's incremental borrowing rate is used, being the rate that the lessee would have to pay to borrow the funds necessary to obtain an asset of similar value in a similar economic environment with similar terms and conditions.

To determine the incremental borrowing rate, the Group:

- where possible, uses recent third-party financing received by the individual lessee as a starting point, adjusted to reflect changes in financing conditions since third party financing was received; and
- makes adjustments specific to the lease, for example term, country, currency and security.

The Group is exposed to potential future increases in variable lease payments based on an index or rate, which are not included in the lease liability until they take effect. When adjustments to lease payments based on an index or rate take effect, the lease liability is reassessed and adjusted against the right-of-use asset.

Right-of-use assets are measured at cost comprising the following:

- the amount of the initial measurement of lease liability;
- any lease payments made at or before the commencement date less any lease incentives received;

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- any initial direct costs; and
- restoration costs.

The right-of-use asset is depreciated over the shorter of the asset's useful life and the lease term on a straight-line basis. If the Group is reasonably certain to exercise a purchase option, the right-of-use asset is depreciated over the underlying asset's useful life.

Payments associated with short-term leases of equipment and vehicles and leases of low-value assets are recognized on a straight-line basis as an expense in profit or loss. Short-term leases are leases with a lease term of 12 months or less. Low-value assets comprise IT-equipment and small items of office furniture.

(2) Extension and termination options

Extension and termination options are included in a number of property and equipment leases. These terms are used to maximize operational flexibility in terms of managing contracts. The majority of extension and termination options held are exercisable only by the Group and not by the respective lessor.

2.9 Foreign Currency Translation

Items included in the financial statements of each of the Group's entities are measured using the currency of the primary economic environment in which each entity operates (the "functional currency"). The consolidated financial statements are presented in Korean won, which is the Parent Company's functional and presentation currency.

Foreign currency transactions are translated into the functional currency using the exchange rates at the dates of the transactions. At the end of each reporting period, monetary items denominated in foreign currencies are retranslated at the rates prevailing at that date. Non-monetary items carried at fair value that are denominated in foreign currencies are retranslated at the rates prevailing at the date when the fair value was determined. Non-monetary items that are measured in terms of historical cost in a foreign currency are not retranslated.

Goodwill and fair value adjustments to the carrying amounts of assets and liabilities arising on the acquisition of a foreign operation are treated as assets and liabilities of the foreign operation and translated at the closing rate at the end of the reporting period.

2.10 Borrowing Costs

Borrowing costs directly attributable to the acquisition, construction or production of qualifying assets, which are assets that necessarily take a substantial period to get ready for their intended use or sale, are added to the cost of those assets until the assets are substantially ready for their intended use or sale.

To the extent that variable-rate borrowings are used to finance a qualifying asset and are hedged in an effective cash flow hedge of interest rate risk, the effective portion of the derivative is recognized in other comprehensive income and reclassified to profit or loss when the qualifying asset impacts

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profit or loss. To the extent that fixed rate borrowings are used to finance a qualifying asset and are hedged in an effective fair value hedge of interest rate risk, the capitalized borrowing costs reflect the hedged interest rate.

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

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

2.11 Government Grants

Government grants are not recognized until there is a reasonable assurance that the Group will comply with the conditions attaching to them and that the grants will be received.

The benefit of a government loan at a below-market rate of interest is treated as a government grant, measured as the difference between proceeds received and the fair value of the loan based on prevailing market interest rates.

Government grants related to assets are presented in the consolidated statements of financial position by deducting the grant from the carrying amount of the asset. The related grant is recognized in profit or loss over the life of a depreciable asset as a reduced depreciation expense.

Government grants related to income are recognized in profit or loss on a systematic basis over the period in which the Group recognizes as expenses the related costs for which the grants are intended to compensate. Government grants that are receivable as compensation for expenses or losses already incurred or for the purpose of giving immediate financial support to the Group with no future related costs are recognized in profit or loss in the period in which they become receivable.

2.12 Employee Benefits, Termination Benefits and Other Long-term Retirement Benefits

Contributions to defined contribution retirement benefit plans are recognized as an expense when employees have rendered service entitling them to the contributions.

For defined benefit retirement benefit plans, the cost of providing benefits is determined using the projected unit credit method, with actuarial valuations being carried out at the end of each reporting period. Remeasurement, comprising the actuarial gains and losses, the effect of the changes to the asset ceiling (if applicable) and the return on plan assets (excluding interest), is reflected immediately in the consolidated statements of financial position with a charge or credit recognized in other comprehensive income in the period in which it occurs. Remeasurement recognized in other comprehensive income is reflected immediately in retained earnings and will not be reclassified to profit or loss. Past service costs are recognized in profit or loss on the earlier of (1) the date of the plan amendment or curtailment and (2) the date that the Group recognizes restructuring-related costs. The Group recognized gains and losses on the settlement of a defined benefit plan when the settlement occurs.

Net interest is calculated by applying the discount rate to the net defined benefit liability or asset. Defined benefit costs are composed of service cost (including current service cost, past service cost

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as well as gains and losses on curtailments and settlements), net interest expense (income) and remeasurement.

The Group presents the service cost and net interest expense (income) components in profit or loss as cost of sales and selling and administrative expenses and the remeasurement component in other comprehensive income. Curtailment gains and losses are accounted for as past service costs.

The post-employment benefit obligation recognized in the consolidated statements of financial position represents the actual deficit or surplus in the Group's defined benefit plans. Any surplus resulting from this calculation is limited to the present value of any economic benefits available in the form of refunds from the plans or reductions in future contributions to the plans.

The Group provides long-term employee benefits that are entitled to employees with service period for ten years and above. The expected costs of these benefits are accrued over the period of employment using the same accounting methodology as used for defined benefit pension plans. The Group recognizes service cost, net interest on other long-term employee benefits and remeasurements as profit or loss for the year. These liabilities are valued annually by an independent qualified actuary.

A liability for a termination benefit is recognized at the earlier of when the entity can no longer withdraw the offer of the termination benefit or when the entity recognizes any related restructuring costs.

2.13 Current and Deferred Tax

Income tax expense represents the sum of the current tax and deferred tax.

(1) Current tax

The current income tax expense is measured at the amount expected to be paid to the taxation authorities, using the tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period. Management periodically evaluates positions taken in tax returns with respect to situations in which applicable tax regulation is subject to interpretation, and considers whether it is probable that a taxation authority will accept an uncertain tax treatment. The Group measures its tax balances either based on the most likely amount or the expected value, depending on which method provides a better prediction of the resolution of the uncertainty.

(2) Deferred tax

Deferred tax is the tax expected to be payable or recoverable on differences between the carrying amounts of assets and liabilities in the financial statements and the corresponding tax bases used in the computation of taxable profit and is accounted for using the liability method. Deferred tax liabilities are generally recognized for all taxable temporary differences. Deferred tax assets are generally recognized for all deductible temporary differences to the extent that it is probable that taxable profits will be available against which those deductible temporary differences can be utilized. Such deferred tax assets and liabilities are not recognized if the temporary difference arises from goodwill or from the initial recognition (other than in a business combination) of other assets and

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liabilities in a transaction that affects neither the taxable profit nor the accounting profit.

Deferred tax liabilities are recognized for taxable temporary differences associated with investments in subsidiaries and associates and interests in joint ventures, except where the Group is able to control the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. Deferred tax assets arising from deductible temporary differences associated with such investments and interests are only recognized to the extent that it is probable that there will be sufficient taxable profits against which the benefits of the temporary differences can be utilized and they are expected to reverse in the foreseeable future.

The carrying amount of deferred tax assets is reviewed at the end of each reporting period and reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow all or part of the assets to be recovered.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the period in which the liability is settled or the asset is realized based on tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period. The measurement of deferred tax liabilities and assets reflects the tax consequences that would follow from the manner in which the Group expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities.

Deferred tax assets and liabilities are offset if, and only if, the Group has a legally enforceable right to set off current tax assets against current tax liabilities and the deferred tax assets and liabilities relate to income taxes levied by the same taxation authority on either the same taxable entity or different taxable entities, which intend either to settle current tax liabilities and assets on a net basis or to realize the assets and settle the liabilities simultaneously in each future period in which significant amounts of deferred tax liabilities or assets are expected to be settled or recovered.

Deferred tax assets and liabilities originated from investment properties are measured under the assumption that the book amount of investment properties is to be retrieved by sales. Therefore, if there is no solid evidence to state otherwise, the measurement of deferred tax assets and liabilities reflect the tax effect from sale of investment properties. However, if the sole purpose of the investment properties is to earn economic value overtime through depreciation rather than selling, above assumption does not meet.

(3) Current and deferred taxes for the year

Current and deferred taxes are recognized in profit or loss, except when they relate to items that are recognized in other comprehensive income or directly in equity, in which case the current and deferred taxes are also recognized in other comprehensive income or directly in equity. Where current tax or deferred tax arises from the initial accounting for a business combination, the tax effect is included in the accounting for the business combination.

2.14 Property, Plant and Equipment

Land is shown at fair value based on valuations by external independent appraisers. Valuations are performed with sufficient regularity to ensure that the fair value of a revalued asset does not differ

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materially from its carrying amount.

Increases in the carrying amount arising on revaluation of land are credited to other comprehensive income and shown as other reserves in equity. Decreases that offset previous increases of the same asset are charged to other comprehensive income and debited against other reserves directly in equity; all other decreases are charged to the statement of profit or loss. However, the decrease shall be recognized in other comprehensive income to the extent of any credit balance existing in the revaluation surplus in respect of that asset.

Property, plant and equipment, except for land, are stated at cost, less subsequent accumulated depreciation and accumulated impairment losses. The cost of an item of property, plant and equipment is directly attributable to its purchase or construction, which includes 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. It also includes the initial estimate of the costs of dismantling and removing the item and restoring the site on which it is located.

Subsequent costs are recognized in carrying amount of an asset or as a separate asset if it is probable that future economic benefits associated with the assets will flow into the Group and the cost of an asset can be measured reliably. Routine maintenance and repairs are expensed as incurred.

The Group does not depreciate land. Depreciation expense is computed using the straight-line method based on the estimated useful lives of the assets as follows:

	Useful lives
Buildings	5 - 65 years
Structures	5 - 55
Machinery	2 - 20
Vehicles	1 - 12
Tools and equipment	1 - 20
Others	1 - 30

If each part of an item of property, plant and equipment has a cost that is significant in relation to the total cost of the item, it is depreciated separately.

The Group reviews the depreciation method, the estimated useful lives and the residual values of property, plant and equipment at the end of each annual reporting period. If expectations differ from previous estimates, the changes are accounted for as a change in an accounting estimate.

An item of property, plant and equipment is derecognized upon disposal or when no future economic benefits are expected to arise from the continued use of the asset. Any gain or loss arising on derecognition of the property (calculated as the difference between the net disposal proceeds and the carrying amount of the asset) is included in profit or loss in the period in which the property is derecognized. When revalued assets are sold, the amounts included in revaluation reserves are transferred to retained earnings.

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2.15 Investment Property

Investment properties are properties held to earn rentals or for capital appreciation.

Investment properties are measured initially at cost, including transaction costs. Subsequent to initial recognition, investment properties are measured at fair value. In case that it is possible to measure reliably the fair value of investment property under construction, the fair value method is adopted. In case that the fair value of an investment property under construction is not reliably determinable but expected to be reliably determinable when construction is complete, the Group measures that investment property under construction at cost, net of accumulated impairment losses, until either its fair value becomes reliably determinable or construction is completed, whichever is earlier.

The fair value of investment property reflects market conditions at the end of the reporting period, with adjustment that reflects specific asset's characteristics, condition and location. The book amount for financial reporting purpose is determined based on the evaluation of the investment property by an independent valuer, who holds a recognized and relevant professional qualification and has recent experience in the location and category of the investment property being valued.

Subsequent costs are recognized in the carrying amount of an asset or as a separate asset if it is probable that future economic benefits associated with the assets will flow into the Group and the cost of an asset can be measured reliably. Routine maintenance and repairs are expensed as incurred.

A gain or loss arising from a change in the fair value of investment property is recognized in profit or loss for the year in which it arises. In case that the investment property is disposed of with its fair value in an arm's length transaction, the investment property's fair value is recognized as its book amount in the current period, and the difference is recognized in the statement of profit or loss.

2.16 Intangible Assets

(1) Intangible assets acquired separately

Intangible assets with finite useful lives that are acquired separately are carried at cost, less accumulated amortization and accumulated impairment losses, and amortization is recognized on a straight-line basis over their estimated useful lives. The estimated useful life and the amortization method are reviewed at the end of each reporting period, with the effect of any changes in estimate being accounted for on a prospective basis. Intangible assets with indefinite useful lives that are acquired separately are carried at cost, less accumulated impairment losses.

Useful lives

Development costs	3 – 20 years
Others	1 – 30

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(2) Internally generated intangible assets - research and development expenditure

Expenditure on research activities is recognized as an expense in the period in which it is incurred.

Expenditure arising from development (or from the development phase of an internal project) is recognized as an intangible asset if, only if, the development project is designed to produce new or substantially improved products and the Group can demonstrate the technical and economic feasibility and measure reliably the resources attributable to the intangible asset during its development.

The amount initially recognized for internally generated intangible assets is the sum of the expenditure incurred from the date when the intangible asset first meets the recognition criteria. Where no internally generated intangible asset can be recognized, development expenditure is recognized in profit or loss in the period in which it is incurred.

Subsequent to initial recognition, internally generated intangible assets are reported at cost, less accumulated amortization and accumulated impairment losses.

(3) Intangible assets acquired in a business combination

Intangible assets that are acquired in a business combination are recognized separately from goodwill and are initially recognized at their fair value at the acquisition date (which is regarded as their cost). Subsequent to initial recognition, intangible assets acquired in a business combination are reported at cost, less accumulated amortization and accumulated impairment losses.

(4) Derecognition of intangible assets

An intangible asset is derecognized on disposal or when no future economic benefits are expected from its use. Gains or losses arising from derecognition of an intangible asset, measured as the difference between the net disposal proceeds and the carrying amount of the asset, are recognized in profit or loss when the asset is derecognized.

(5) Patent and Trademark

Patent and trademark are initially recognized at cost and amortized using the straight-line method over the estimated useful lives.

(6) Others

Certain intangible assets that have an indefinite useful life are not subject to amortization because there is no foreseeable limit to the period over which the assets are expected to be utilized.

2.17 Impairment of Tangible and Intangible Assets Other Than Goodwill

At the end of each reporting period, the Group reviews the carrying amounts of its tangible and intangible assets other than goodwill to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss (if any). When it is not possible

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to estimate the recoverable amount of an individual asset, the Group estimates the recoverable amount of the CGU to which the asset belongs. Where a reasonable and consistent basis of allocation can be identified, corporate assets are also allocated to individual CGUs; otherwise, they are allocated to the smallest group of CGUs for which a reasonable and consistent allocation basis can be identified.

Intangible assets with indefinite useful lives and intangible assets not yet available for use are tested for impairment at least annually and whenever there is an indication that an asset may be impaired.

Recoverable amount is the higher of net fair value or value in use. If the recoverable amount of an asset (or a CGU) is estimated to be less than its carrying amount, the carrying amount of the asset (or the CGU) is reduced to its recoverable amount and the reduced amount is recognized in profit or loss.

Where an impairment loss subsequently reverses, the carrying amount of the asset (or the CGU) is increased to the revised estimate of its recoverable amount so that the increased carrying amount does not exceed the carrying amount that would have been determined had no impairment loss been recognized for the asset (or the CGU) in prior years. A reversal of an impairment loss is recognized immediately in profit or loss.

2.18 Inventories

Inventories are stated at the lower of cost or net realizable value. Cost of inventories is measured using the specific identification method or the moving-weighted average method, and consists of the purchase price, cost of conversion and other costs incurred in bringing the inventories to their present location and condition. Net realizable value represents the estimated selling price for inventories, less all estimated costs of completion and costs necessary to make the sale.

When inventories are sold, the carrying amount of those inventories is recognized as an expense (cost of sales) in the period in which the related revenue is recognized. 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 amounts of inventories recognized as an expense in the period in which the reversal occurs.

2.19 Provisions

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

The amount recognized as a provision is the best estimate of the consideration required to settle the present obligation at the end of the reporting period, taking into account the risks and uncertainties surrounding the obligation. When a provision is measured using the cash flows estimated to settle the present obligation, its carrying amount is the present value of those cash flows (where the effect of the time value of money is material). The discount rate used is a pretax rate that reflects current market assessments of the time value of money and the risks specific to

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the liability. Where discounting is used, the increase in the provision due to the passage is recognized in profit or loss as borrowing cost.

When some or all of the economic benefits required to settle a provision are expected to be recovered from a third party, a receivable is recognized as an asset if it is virtually certain that reimbursement will be received and the amount of the receivable can be measured reliably.

At the end of each reporting period, the remaining provision balance is reviewed and assessed to determine if the current best estimate is being recognized. If the existence of an obligation to transfer economic benefit is no longer probable, the related provision is reversed during the period.

2.20 Financial Assets

All regular way purchases or sales of financial assets are recognized and derecognized on a trade-date basis. Regular way purchases or sales are purchases or sales of financial assets that require delivery of assets within the time frame established by regulation or convention in the marketplace.

All recognized financial assets are measured subsequently in their entirety at either amortized cost or fair value depending on the classification of the financial assets.

(1) Classification of financial assets

Debt instruments that meet the following conditions are measured subsequently at amortized cost:

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

Debt instruments that meet the following conditions are measured subsequently at FVTOCI:

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

By default, all other financial assets are measured subsequently at FVTPL. Despite the foregoing, the Group may make the following irrevocable election or designation at initial recognition of a financial asset:

- The Group may irrevocably elect to present subsequent changes in fair value of an equity investment in other comprehensive income if certain criteria are met (see (1-3) below); and
- The Group may irrevocably designate a debt investment that meets the amortized cost or FVTOCI criteria as measured at FVTPL if doing so eliminates or significantly reduces an accounting mismatch (see (1-4) below).

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1-1) Amortized cost and effective interest method

The effective interest method is a method of calculating the amortized cost of a debt instrument and allocating interest income over the relevant period. For financial assets other than purchased or originated credit-impaired financial assets (i.e., assets that are credit impaired on initial recognition), the effective interest rate is the rate that exactly discounts estimated future cash receipts (including all fees and points paid or received that form an integral part of the effective interest rate, transaction costs and other premiums or discounts), excluding ECLs, through the expected life of the debt instrument, or, where appropriate, a shorter period, to the gross carrying amount of the debt instrument on initial recognition. For purchased or originated credit-impaired financial assets, a credit-adjusted effective interest rate is calculated by discounting the estimated future cash flows, including ECLs, to the amortized cost of the debt instrument on initial recognition.

The amortized cost of a financial asset is the amount at which the financial asset is measured at initial recognition, minus the principal repayments, plus the cumulative amortization using the effective interest method of any difference between that initial amount and the maturity amount, adjusted for any loss allowance. The gross carrying amount of a financial asset is the amortized cost of the financial asset before adjusting for any loss allowance.

Interest income is recognized using the effective interest method for debt instruments measured subsequently at amortized cost and at FVTOCI. For financial assets other than purchased or originated credit-impaired financial assets, interest income is calculated by applying the effective interest rate to the gross carrying amount of a financial asset, except for financial assets that have subsequently become credit impaired (see below). For financial assets that have subsequently become credit impaired, interest income is recognized by applying the effective interest rate to the amortized cost of the financial asset. If, in subsequent reporting periods, the credit risk on the credit impaired-financial instrument improves so that the financial asset is no longer credit impaired, interest income is recognized by applying the effective interest rate to the gross carrying amount of the financial asset.

For purchased credit-impaired financial assets, the Group recognizes interest income by applying the credit-adjusted effective interest rate to the amortized cost of the financial asset from initial recognition. The calculation does not revert to the gross basis even if the credit risk of the financial asset subsequently improves so that the financial asset is no longer credit impaired.

Interest income is recognized in profit or loss and is included in the "finance income - interest income according to the effective interest rate method" line item (Note 54).

1-2) Debt instruments classified as at FVTOCI

Fair value is determined using the valuation techniques described in Note 61. The corporate bonds are initially measured at fair value plus transaction costs. Subsequently, changes in the carrying amount of these corporate bonds as a result of foreign exchange gains and losses, impairment gains or losses and interest income calculated using the effective interest method are recognized in profit or loss. The amounts that are recognized in profit or loss are the same as the amounts that would have been recognized in profit or loss if these corporate bonds had been measured at amortized cost. All other changes in the carrying amount of these corporate bonds are recognized in other

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comprehensive income and accumulated under the heading of investments revaluation reserve. When these corporate bonds are derecognized, the cumulative gains or losses previously recognized in other comprehensive income are reclassified to profit or loss.

1-3) Equity instruments designated as at FVTOCI

On initial recognition, the Group may make an irrevocable election (on an instrument-by-instrument basis) to designate investments in equity instruments as at FVTOCI. Designation at FVTOCI is not permitted if the equity investment is held for trading or if it is a contingent consideration recognized by an acquirer in a business combination.

A financial asset is held for trading if:

- it has been acquired principally for the purpose of selling in the near term;
- on initial recognition, it is part of a portfolio of identified financial instruments that the Group manages together and has evidence of a recent actual pattern of short-term profit taking; or
- it is a derivative (except for a derivative that is a financial guarantee contract or a designated and effective hedging instrument).

Investments in equity instruments at FVTOCI are initially measured at fair value plus transaction costs. Subsequently, they are measured at fair value, with gains and losses arising from changes in fair value recognized in other comprehensive income and accumulated in the investments . The cumulative gain or loss is not reclassified to profit or loss on disposal of the equity investments, instead it is transferred to retained earnings.

Dividends on these investments in equity instruments are recognized in profit or loss in accordance with KIFRS 1109, unless the dividends clearly represent a recovery of part of the cost of the investment. Dividends are included in the 'finance income' line item (Note 54) in profit or loss.

1-4) Financial assets at FVTPL

Financial assets that do not meet the criteria for being measured at amortized cost or FVTOCI are measured at FVTPL. Specifically:

- investments in equity instruments are classified as at FVTPL, unless the Group designates an equity investment that is neither held for trading nor a contingent consideration arising from a business combination as at FVTOCI on initial recognition (see (1-3) above); and
- debt instruments that do not meet the amortized cost criteria or the FVTOCI criteria (see (1-1) and (1-2) above) are classified as at FVTPL. In addition, debt instruments that meet either the amortized cost criteria or the FVTOCI criteria may be designated as at FVTPL upon initial recognition if such designation eliminates or significantly reduces a measurement or recognition inconsistency (so called 'accounting mismatch') that would arise from measuring assets or liabilities or recognizing the gains and losses on them on different bases.

Financial assets at FVTPL are measured at fair value at the end of each reporting period, with any

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fair value gains or losses recognized in profit or loss to the extent they are not part of a designated hedging relationship. The net gain or loss recognized in profit or loss includes dividends earned on the financial asset in the 'other non-operating income and expenses. Meanwhile, interests on financial assets at FVTPL are recognized in 'finance income-other' (Note 54). The fair value is determined as described in Note 61.

(2) Foreign exchange gains and losses

The carrying amount of financial assets that are denominated in a foreign currency is determined in that foreign currency and translated at the spot rate at the end of each reporting period. Specifically:

- for financial assets measured at amortized cost that are not part of a designated hedging relationship, exchange differences are recognized in profit or loss in the 'other non-operating income and expenses' line item;
- for debt instruments measured at FVTOCI that are not part of a designated hedging relationship, exchange differences on the amortized cost of the debt instrument are recognized in profit or loss in the 'other non-operating income and expenses'. Other exchange differences are recognized in other comprehensive income in the investments revaluation reserve;
- for financial assets measured at FVTPL that are not part of a designated hedging relationship, exchange differences are recognized in profit or loss in the 'other non-operating income and expenses' line item; and
- for equity instruments measured at FVTOCI, exchange differences are recognized in other comprehensive income in the investments revaluation reserve.

(3) Impairment of financial assets

The Group recognizes a loss allowance for ECLs on investments in debt instruments that are measured at amortized cost or at FVTOCI, lease receivables, trade receivables and contract assets, as well as on financial guarantee contracts. The amount of ECLs is updated at each reporting date to reflect changes in credit risk since initial recognition of the respective financial instrument.

The Group always recognizes lifetime ECL for trade receivables, contract assets and lease receivables. The ECLs on these financial assets are estimated using a provision matrix based on the Group's historical credit loss experience, adjusted for factors that are specific to the debtors, general economic conditions and an assessment of both the current as well as the forecast direction of conditions at the reporting date, including time value of money where appropriate.

For all other financial instruments, the Group recognizes lifetime ECL when there has been a significant increase in credit risk since initial recognition. Lifetime ECL represents the ECLs that will result from all possible default events over the expected life of a financial instrument.

3-1) Significant increase in credit risk

In assessing whether the credit risk on a financial instrument has increased significantly since initial recognition, the Group compares the risk of a default occurring on the financial instrument at the

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reporting date with the risk of a default occurring on the financial instrument at the date of initial recognition. In making this assessment, the Group considers both quantitative and qualitative information that is reasonable and supportable, including historical experience and forward-looking information that is available without undue cost or effort.

In particular, the following information is taken into account when assessing whether credit risk has increased significantly since initial recognition:

- an actual or expected significant deterioration in the financial instrument's external (if available) or internal credit rating; and
- significant increases in credit risk on other financial instruments of the same debtor.

Despite the foregoing, the Group assumes that the credit risk on a financial instrument has not increased significantly since initial recognition if the financial instrument is determined to have low credit risk at the reporting date. A financial instrument is determined to have low credit risk if: (1) the financial instrument has a low risk of default, (2) the debtor has a strong capacity to meet its contractual cash flow obligations in the near term, and (3) adverse changes in economic and business conditions in the longer term may, but will not necessarily, reduce the ability of the borrower to fulfil its contractual cash flow obligations.

The Group regularly monitors the effectiveness of the criteria used to identify whether there has been a significant increase in credit risk and revises them as appropriate to ensure that the criteria are capable of identifying significant increase in credit risk before the amount becomes past due.

3-2) Definition of loss event

The Group assumes to be a loss event when debtor fails to perform contractual agreements in the past experience for the purpose of internal managing credit risk.

3-3) Credit-impaired financial assets

Financial assets are impaired when detrimental evidence shows that the present value of estimated future cash flow decreases. Such evidence includes, but not limited to:

- significant financial difficulty of issuer or obligor; or
- a breach of contract, such as a default or delinquency in interest or principal payments.

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3-4) Write-off policy

The Group writes off financial assets when the assets are determined to be no longer recoverable by borrower's financial difficulty, such as bankruptcy. Financial assets written-off can be object of collectable process with adequate legal procedure.

3-5) Measurement and recognition of ECLs

The measurement of ECLs is a function of the probability of default, loss-given default (i.e., the magnitude of the loss if there is a default) and the exposure at default. The assessment of the probability of default and loss-given default is based on historical data adjusted by forward-looking information as described above. As for the exposure at default, for financial assets, this is represented by the assets' gross carrying amount at the reporting date.

For financial assets, the ECL is estimated as the difference between all contractual cash flows that are due to the Group in accordance with the contract and all the cash flows that the Group expects to receive, discounted at the original effective interest rate.

For a financial guarantee contract, as the Group is required to make payments only in the event of a default by the debtor in accordance with the terms of the instrument that is guaranteed, the expected loss allowance is the expected payments to reimburse the holder for a credit loss that it incurs, less any amounts that the Group expects to receive from the holder, the debtor or any other party.

The Group recognizes an impairment gain or loss in profit or loss for all financial instruments with a corresponding adjustment to their carrying amount through a loss allowance account, except for investments in debt instruments that are measured at FVTOCI, for which the loss allowance is recognized in other comprehensive income and accumulated in the investment revaluation reserve, and does not reduce the carrying amount of the financial asset in the separate statements of financial position.

(4) Derecognition of financial assets

The Group derecognizes a financial asset only when the contractual rights to the cash flows from the asset expire or when it transfers the financial asset and substantially all the risks and rewards of ownership of the asset to another entity. If the Group neither transfers nor retains substantially all the risks and rewards of ownership and continues to control the transferred asset, the Group recognizes its retained interest in the asset and an associated liability for amounts it may have to pay. If the Group retains substantially all the risks and rewards of ownership of a transferred financial asset, the Group continues to recognize the financial asset and also recognizes a collateralized borrowing for the proceeds received.

On derecognition of a financial asset measured at amortized cost, the difference between the asset's carrying amount and the sum of the consideration received and receivable is recognized in profit or loss. In addition, on derecognition of an investment in a debt instrument classified as at FVTOCI, the cumulative gain or loss previously accumulated in the investments revaluation reserve is reclassified to profit or loss. In contrast, on derecognition of an investment in equity instrument which

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the Group has elected on initial recognition to measure at FVTOCI, the cumulative gain or loss previously accumulated in the investments revaluation reserve is not reclassified to profit or loss but is transferred to retained earnings.

2.21 Financial Liabilities and Equity Instruments

(1) Classification as debt or equity

Debt and equity instruments are classified as either financial liabilities or as equity in accordance with the substance of the contractual arrangement and the definitions of a financial liability and an equity instrument.

(2) Equity instruments

An equity instrument is any contract that evidences a residual interest in the assets of an entity after deducting all of its liabilities. Equity instruments issued by the Group are recognized as the proceeds received, net of direct issuance costs.

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

(3) Compound instruments

The component parts of compound instruments are classified separately as financial liabilities and equity in accordance with the substance of the contractual arrangements and the definitions of a financial liability and equity instrument. At the date of issue, the fair value of the liability component is estimated using the prevailing market interest rate for a similar non-convertible instrument. The conversion option classified as equity is determined by deducting the amount of the liability component from the fair value of the compound instrument as a whole. This is recognized and included in equity, net of income tax effects, and is not subsequently remeasured.

(4) Financial liability

All financial liabilities are measured subsequently at amortized cost using the effective interest method or at FVTPL. However, financial liabilities that arise when a transfer of a financial asset does not qualify for derecognition or when the continuing involvement approach applies, and financial guarantee contracts are issued by the Group, are measured in accordance with the specific accounting policies set out below.

(5) Financial liabilities at FVTPL

Financial liabilities are classified as at FVTPL when a financial liability is a contingent consideration that may be paid by an acquirer as part of a business combination to which KIFRS 1103 applies or held for trading, or it is designated as at FVTPL.

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A financial liability is classified as held for trading if:

- it has been acquired principally for the purpose of repurchasing in the near term;
- on initial recognition, it is part of a portfolio of identified financial instruments that the Group manages together and has a recent actual pattern of short-term profit taking; or
- it is a derivative that is not designated and effective as a hedging instrument.

A financial liability other than a financial liability held for trading or a contingent consideration that may be paid by an acquirer as part of a business combination may be designated as at FVTPL upon initial recognition if:

- such designation eliminates or significantly reduces a measurement or recognition inconsistency that would otherwise arise;
- the financial liability forms part of a group of financial assets or financial liabilities or both, which is managed and its performance is evaluated on a fair value basis, in accordance with the Group's documented risk management or investment strategy, and information about the grouping is provided internally on that basis; or
- it forms part of a contract containing one or more embedded derivatives, and KIFRS 1109 permits the entire combined contract (asset or liability) to be designated as at FVTPL.

Financial liabilities at FVTPL are measured at fair value, with any gains or losses arising on changes in fair value recognized in profit or loss to the extent that they are not part of a designated hedging relationship. The net gain or loss recognized in profit or loss incorporates any interest paid on the financial liability and is included in the 'other income or expenses' line item.

However, for financial liabilities that are designated as at FVTPL, the amount of change in the fair value of the financial liability that is attributable to changes in the credit risk of that liability is recognized in other comprehensive income, unless the recognition of the effects of changes in the liability's credit risk in other comprehensive income would create or enlarge an accounting mismatch in profit or loss. The remaining amount of change in the fair value of liability is recognized in profit or loss. Changes in fair value attributable to a financial liability's credit risk that are recognized in other comprehensive income are not subsequently reclassified to profit or loss; instead, they are transferred to retained earnings upon derecognition of the financial liability.

Gains or losses on financial guarantee contracts issued by the Group that are designated by the Group as at FVTPL are recognized in profit or loss.

(6) Financial liabilities measured subsequently at amortized cost

Financial liabilities that are not (1) contingent consideration of an acquirer in a business combination, (2) held for trading or (3) designated as at FVTPL are measured subsequently at amortized cost using the effective interest method.

The effective interest method is a method of calculating the amortized cost of a financial liability and

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allocating interest expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash payments, including all fees and points paid or received (that form an integral part of the effective interest rate) transaction costs and other premiums or discounts through the expected life of the financial liability, or (where appropriate) a shorter period, to the net carrying amount on initial recognition.

(7) Financial guarantee contracts

A financial guarantee contract is a contract that requires the issuer to make specified payments to reimburse the holder for a loss it incurs because a specified debtor fails to make payments when due in accordance with the terms of debt instruments.

Financial guarantee contract liabilities are initially measured at their fair values and, if not designated as at FVTPL, are subsequently measured at the higher of:

- the amount of loss allowance, as determined in accordance with KIFRS 1109 (see "Financial assets" above); or
- the amount initially recognized, less cumulative amortization recognized in accordance with KIFRS 1115.

(8) Foreign exchange gains and losses

For financial liabilities that are denominated in a foreign currency and are measured at amortized cost at the end of each reporting period, the foreign exchange gains and losses are determined based on the amortized cost of the instruments. These foreign exchange gains and losses are recognized in the 'other income or expenses' line item in consolidated statements of comprehensive income for financial liabilities that are not part of a designated hedging relationship. For those which are designated as a hedging instrument for a hedge of foreign currency risk, foreign exchange gains and losses are recognized in other comprehensive income and accumulated in a separate component of equity.

The fair value of financial liabilities denominated in a foreign currency is determined in that foreign currency and translated at the spot rate at the end of the reporting period. For financial liabilities that are measured as at FVTPL, the foreign exchange component forms part of the fair value gains or losses and is recognized in profit or loss for financial liabilities that are not part of a designated hedging relationship.

(9) Derecognition of financial liabilities

The Group derecognizes financial liabilities when, the Group's obligations are discharged, cancelled or have expired. The difference between the carrying amount of the financial liability derecognized and the consideration paid and payable is recognized in profit or loss.

When the Group exchanges with the existing lender one debt instrument for another one with substantially different terms, such exchange is accounted for as an extinguishment of the original financial liability and the recognition of a new financial liability. Similarly, the Group accounts for

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substantial modification of terms of an existing liability or part of it as an extinguishment of the original financial liability and the recognition of a new liability.

2.22 Derivative Financial Instruments

The Group enters into a variety of derivative financial instruments to manage its exposure to interest rate and foreign exchange rate risk, including foreign exchange forward contracts, interest rate swaps and cross-currency swaps.

Derivatives are initially recognized at fair value at the date the derivative contract is entered into and are subsequently remeasured to their fair value at the end of each reporting period. The resulting gain or loss is recognized in profit or loss immediately, unless the derivative is designated and effective as a hedging instrument; in such case, the timing of the recognition in profit or loss depends on the nature of the hedge relationship.

A derivative with a positive fair value is recognized as a financial asset, and a derivative with a negative fair value is recognized as a financial liability. The Group does not offset a derivative financial instrument unless there is a legal right or intention to offset. A derivative is presented as a non-current asset or a non-current liability if the remaining maturity of the instrument is more than 12 months and it is not expected to be realized or settled within 12 months. Other derivatives are presented as current assets or current liabilities.

The Group recognizes changes in the fair value of derivatives that are designated as hedging instruments and changes in the fair value of the hedged item in profit or loss.

Also, the effective portion of changes in the fair value of derivatives that are designated and qualify as cash flow hedges is recognized in other comprehensive income. The gain or loss relating to the ineffective portion is immediately recognized as profit or loss in the consolidated statement of comprehensive income.

2.23 Accounting related to the Greenhouse Gas Emission Rights Cap and Trade Scheme

The Group classifies the emission rights as intangible assets. Emission rights allowances the government allocated free of charge are measured at nil, and emission rights allowances purchased are measured at cost, which the Group paid to purchase the allowances. If emission rights the government allocated free of charge are sufficient to settle the emission rights allowances allotted for vintage year, the emission liabilities are measured at nil. However, for the emission liabilities that exceed the allowances allocated free of charge, the shortfall is measured at best estimate at the end of the reporting period.

2.24 Non-current Assets (or Disposal Group) Held for sale

Non-current assets (or disposal group) are classified as held for sale when their carrying amount will be recovered principally through a sale transaction rather than through continuing use and a sale is considered highly probable. The assets are measured at the lower amount between their carrying amount and the fair value less costs to sell.

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2.25 Reserve for Credit Losses

The Group is required to appropriate, as a reserve for credit losses, a difference between the allowance of credit losses in accordance with KIFRS 1109 *Financial Instruments* and that under the Supervisory Regulations on Insurance Business if the allowance in accordance with KIFRS is less than that in accordance with the Supervisory Regulations on Insurance Business. The reserve for credit losses is included in retained earnings and is allowed to reduce to the reserve amount required by the related financial regulation if the reserve for credit losses is over the required reserve. If there is an accumulated deficit, the reserve for credit losses is not appropriated until the undisposed accumulated deficit is disposed.

2.26 Catastrophe Reserves

The Group annually accumulates the appropriate amount not less than 35 percent nor more than 100 percent of the net premium written multiplied by the reserve rate (2~15%) for each insurance type (fire, marine, auto and casualty, guarantee and foreign direct and assumed reinsurance), within the limit of 50 percent (auto insurance: 40% / guarantee insurance: 150%) of the earned premium of the reporting period in order to make up for the exceptionally large claims in the future. Meanwhile, when accumulating catastrophe reserves, the Group is required to apply 90% as a reserve ratio (however, different reserve ratio may be applied in consideration of the existing reserves, future loss ratio trend and others). The earned premium is based on the current business year, but if the earned premium in the current business year is less than that of the previous business year, it is based on the amount of the previous business year.

Also, when the combined loss ratio of each insurance product exceeds 120% (fire), 110% (marine, auto and casualty), 140% (guarantee), 80% (foreign direct, assumed reinsurance inward), respectively, and if insurance operating loss and loss for the year occur, the excess amount can be reversed within the loss for the year.

2.27 Approval of Issuance of the Financial Statements

The consolidated financial statements as of and for the year ended December 31, 2023 were approved for issue by the Board of Directors on February 28, 2024 and are subject to change with the approval of shareholders at their Annual General Meeting.

3. Material accounting judgments, estimates and assumptions

In the application of the Group accounting policies, which are described in Note 2, management is required to make judgments, estimates and assumptions about the carrying amounts of assets and liabilities that are not readily apparent from other sources. The estimates and associated assumptions are based on historical experience and other factors that are considered to be relevant. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimate is revised if the revision affects only that period or in the period of the revision and future periods if the revision affects both

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current and future periods.

(1) Material decision made in applying accounting policies

1) Capitalization of borrowing costs

As noted in Note 2, the Group capitalizes borrowing costs related to the acquisition, construction or production of the qualifying assets as part of the cost of such assets.

2) Evaluation of business model

The classification and measurement of financial assets is based on contractual cash flow characteristics and business model (see Note 2 'Financial Assets' section). The business model is determined to reflect how groups of financial assets are managed together to meet specific business objectives. These assessments include judgements that reflect all relevant evidence. The relevant evidences include how the performance of an asset is assessed and measured, risks that could affect the performance of an asset, and the way those risks are managed, and compensation of the asset manager. When a financial asset measured at amortized cost or FVTOCI was derecognized before maturity, the Group observed to determine whether it is consistent with the objective of the business model for financial asset management. Observations are part of our ongoing assessment of whether the business model for the remaining financial assets is appropriate and if not appropriate, there has been a change in the business model and a consequent change in the classification of financial assets. No such changes were required during the indicated period.

3) Significant increase in credit risk

As described in Note 2, the loss allowance is measured for assets that have significant increase in ECLs for the whole period or have been impaired since initial recognition. KIFRS 1109 does not define what constitutes a significant increase in credit risk. When assessing whether the credit risk of an asset has increased significantly, the Group considers forward-looking information that is quantitatively and qualitatively reasonable and supported.

(2) Key sources of estimation uncertainty

1) Estimated goodwill impairment

The Group tests whether goodwill has suffered any impairment on an annual basis. The recoverable amount of a cash generating unit (CGU) is determined based on value-in-use calculations (Note 18).

2) Income tax

The income is subject to income taxes based on tax laws and interpretations of tax authorities in numerous jurisdictions. There are many transactions and calculations for which the ultimate tax determination is uncertain.

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3) Fair value of financial instruments

The fair value of financial instruments that are not traded in an active market is determined by using valuation techniques. The Group uses its judgment to select a variety of methods and make assumptions that are mainly based on market conditions existing at the end of each reporting period (Note 61).

4) Impairment of financial assets

The provisions for impairment for financial assets are based on assumptions about risk of default and expected loss rates. The Group uses judgement in making these assumptions and selecting the inputs to the impairment calculation based on the Group's past history, existing market conditions as well as forward looking estimates at the end of each reporting period (Note 61).

5) Net defined benefit liabilities

The present value of net defined benefit liability depends on a number of factors that are determined on an actuarial basis using a number of assumptions including the discount rate (Notes 24 and 39).

6) Uncertainty on the estimation of the total contract revenue and total contract cost

Although total contract revenue is measured based on the contract amount initially agreed, measurement of contract revenue is subject to various uncertainties related to the outcome of future events. This is because as the contract is executed, revenue may decrease depending on the change of construction, compensation, incentives or delayed completion due to the Group's reasons.

The amount of construction revenues is affected by the progress measured based on the cumulative incurred contract costs. Total contract costs are based on future estimates of material costs, labor costs, overhead costs, etc, where there are uncertainties that may change.

7) Provision

The Group has recorded provision for product warranties and construction warranties at the end of each reporting period. These provisions are based on estimates based on historical experience and forecasts of future events. However, there may be a significant difference between past events and forecasts, and there are uncertainties that may cause significant differences between the estimates based on future events and actual events.

8) Impairment of non-financial assets

The Group assesses the existence of impairment on all non-financial assets at the end of each reporting period. For intangible assets with indefinite useful lives, impairment tests are carried out annually or in the event of impairment. For other non-financial assets, the Group carries out impairment tests when there are indications that the carrying amount will not be recoverable. To determine the use value, management must estimate future cash flows from the asset or CGU and choose an appropriate discount rate.

9) Lease

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In determining the lease term, management considers all facts and circumstances that create an economic incentive to exercise an extension option, or not exercise a termination option. Extension options (or periods after termination options) are only included in the lease term if the lease is reasonably certain to be extended (or not terminated).

For leases of warehouses, retail stores and equipment, the following factors are normally the most relevant:

- if there are significant penalties to terminate (or not extend), the Group is typically reasonably certain to extend (or not terminate);
- if any leasehold improvements are expected to have a significant remaining value, the Group is typically reasonably certain to extend (or not terminate) and
- otherwise, the Group considers other factors including historical lease durations and the costs and business disruption required to replace the leased asset.

Most extension options in offices and vehicles leases have not been included in the lease liability, because the Group could replace the assets without significant cost or business disruption.

The lease term is reassessed if an option is actually exercised (or not exercised) or the Group becomes obliged to exercise (or not exercise) it. The assessment of reasonable certainty is only revised if a significant event or a significant change in circumstances occurs, which affects this assessment, and that is within the control of the lessee.

10) Insurance contract liabilities and reinsurance contract liabilities

The Group accrues premium reserves in accordance with insurance supervision regulations to cover future insurance payments such as claims, as of the end of the reporting period. The calculation of these premium reserves is determined by actuarial models, applied interest rates, risk rates, and other assumptions and variables used (Note 36).

Furthermore, the Financial Supervisory Service has issued the 'Guidelines for Calculation of Insurance Company Liability Reserves and Revenue Recognition' during the current year, and domestic insurance companies are required to apply these guidelines sequentially starting from the financial statements for the period ending June 2023.

Accordingly, the Group has reflected guidelines related to 'actuarial assumptions for non-life insurance contracts', 'revenue recognition for insurance contract margins', 'application of the variable fee approach', 'actuarial assumptions for non-life medical insurance', etc., in the current year's consolidated financial statements, with the application of the variable fee approach being retrospectively applied due to the change in accounting policy. The effects of the change in accounting policy are disclosed in note 36.

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11) Revaluation of property, plant and equipment

Land is measured at fair value based on valuations by external independent appraisers. Revaluation is performed with sufficient regularity to ensure that the fair value of a revalued asset does not differ materially from its carrying amount. The officially assessed land price method, in which the official land value is adjusted based on the present condition of the land to calculate the fair value, was applied for the valuation.

12) Fair value measurement of investment property

Investment property is measured at fair value based on valuations by external independent valuers and the fair value evaluation is performed at the end of each reporting period.

The Group applies the officially assessed land price method, in which the official land value is adjusted based on the present condition of the land to calculate the fair value, and the sales comparison approach method, which calculates the price by comprehensively considering the normal transaction price level of similar nearby objects, for valuation.

4. Subsidiaries

(1) Details of subsidiaries as of December 31, 2023 and 2022, are as follows:

	Percentage of ownership (%)		Location	Closing month	Main business
	2023	2022			
Gyeonggi Yongin Techno Valley Co., Ltd.	80.00	80.00	Korea	December	Real estate business
Kimhae Techno Valley Co., Ltd.	80.00	80.00	Korea	December	Real estate business
Agricultural Corporation Company Green Tomorrow	90.00	90.00	Korea	December	Processing and distribution of agricultural, livestock and forest products
Anseong Techno Valley Co., Ltd.	80.00	80.00	Korea	December	Real estate development and supply
Yeosu Sea World Corporation	100.00	100.00	Korea	December	Aquarium
H Valley Co., Ltd.	100.00	100.00	Korea	December	Real estate business
Eco E&O	100.00	100.00	Korea	December	Sewage treatment and environmental pollution prevention facility
HCND Co., Ltd.	100.00	-	Korea	December	Real estate development
Shinan Ui Offshore Windpower Corporation	100.00	-	Korea	December	Wind power generation
Ilsan Seaworld, Co., Ltd	99.11	99.11	Korea	December	Aquarium
Hi-pass Solar Co., Ltd	100.00	100.00	Korea	December	Photovoltaic business
Hanwha 63 City Co., Ltd.	100.00	100.00	Korea	December	Real estate management service and others
Hanwha Galleria Timeworld Co., Ltd.	100.00	100.00	Korea	December	Department store

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Hanwha City Development Co., Ltd	100.00	100.00	Korea	December	Sale and trading of real estate and others
Hanwha Life Lab Co., Ltd.	100.00	100.00	Korea	December	Insurance agency and brokerage
Hanwha B&B Co., Ltd.	100.00	100.00	Korea	December	Food and wholesale/retail
Hanwha Life Insurance Co., Ltd. ¹	44.99	44.99	Korea	December	Life insurance
Hanwha General Insurance Co., Ltd.	63.30	63.30	Korea	December	Insurance and pension services
Hanwha Life Insurance Investigation & Adjusting	100.00	100.00	Korea	December	Insurance and pension services
Hanwha Systems Co., Ltd. ³	46.73	46.73	Korea	December	Gunpowder services
Hanwha Aerospace Co., Ltd. ³	33.95	33.95	Korea	December	Manufacturing of aircraft engine and parts
HANWHA CONNECT CO., LTD. (Formerly, Hanwha Station Development Co., Ltd.)	67.25	67.25	Korea	December	Leasing service
Hanwha Eagles Professional Baseball Club Co., Ltd.	90.00	90.00	Korea	December	Operation of sports club
Hanwha Asset Management Co., Ltd.	100.00	100.00	Korea	December	Asset management
Hanwha Savings Bank Co., Ltd.	100.00	100.00	Korea	December	Deposit and savings import business / Financial loan
Hanwha Precision Machinery Co., Ltd.	100.00	100.00	Korea	December	Manufacturing and sale of Chip Mounter and others
Hanwha Global Asset Corporation	100.00	100.00	Korea	December	Synthetic resin processing and others
Hanwha Compound Corporation Co., Ltd.	100.00	100.00	Korea	December	Manufacturing and sale of packaging materials
Hanwha Solutions Co., Ltd. ³	36.15	36.10	Korea	December	Manufacturing of synthetic resin and other petrochemical products
H&G Chemical Co., Ltd.	51.00	-	Korea	December	Compound manufacturing
Hanwha Chemical Overseas Holdings, Co., Ltd.	100.00	100.00	Korea	December	Holding company
Hanwha Vision Co., Ltd. (Formerly, Hanwha Techwin Co., Ltd.)	100.00	100.00	Korea	December	Manufacturing of broadcasting and wireless communication equipment
Hanwha Investment & Securities Co., Ltd. ³	45.24	45.24	Korea	December	Financial investment
Hanwha Hotel & Resort Inc.	99.36	99.36	Korea	December	Condominium operation
Hanwha Robotics Co., Ltd.	100.00	-	Korea	December	Manufacturing and sale of Robots
HANWHA NEXT CO., LTD.	100.00	100.00	Korea	December	Other sports facility operation n. e. c.
Hanwha Techwin Tianjin Opto-Electronic Co., Ltd.	100.00	100.00	China	December	Manufacturing and sale of CCTV and others
Hanwha Tianjin Management Limited.(formerly, Hanwha Investment Management Limited)	100.00	100.00	China	December	Investment management
Hanwha Chemical Trading (Shanghai) Co., Ltd.	100.00	100.00	China	December	Trading
Hanwha International Trading (Shanghai) Co., Ltd.	100.00	100.00	China	December	Trading
Hanwha TechM (Suzhou) Co., Ltd.	100.00	100.00	China	December	Production of machine tools and power train

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Hanwha Commercial Equipment Co., Ltd.	100.00	100.00	China	December	Sale of compressor and industrial equipment
Peoplife Co., Ltd.	98.82	-	Korea	December	Insurance agency and brokerage
Hanwha Galleria Co., Ltd. ³	37.52	-	Korea	December	Department store
FG Korea Co., Ltd.	100.00	-	Korea	December	Five Guys franchise business
Vino Galleria Co., Ltd.	100.00	-	Korea	December	Import and distribution of wine
Acropark Golf Corp.	100.00	100.00	Japan	December	Golf course and resort business
EMBR PTY LTD	100.00	100.00	Australia	December	Supply of gunpowder products and services
Garnet Solar Power Generation 1, LLC	100.00	100.00	USA	December	Photovoltaic business
Hanwha Advanced Materials America LLC	100.00	100.00	USA	December	Manufacturing of automobile parts
Hanwha Advanced Materials Beijing Co., Ltd.	100.00	100.00	China	December	Manufacturing of automobile part materials
Hanwha Advanced Materials Chongqing Co., Ltd.	100.00	100.00	China	December	Manufacturing of automobile materials
Hanwha Advanced Materials Europe, s.r.o.	100.00	100.00	Czech Republic	December	Manufacturing of automobile part materials
Hanwha Advanced Materials Germany GmbH	100.00	100.00	Germany	December	Manufacturing of automobile parts
Hanwha Advanced Materials Holdings USA LLC	100.00	100.00	USA	December	Holding company
Hanwha Advanced Materials Mexico S. De R.L. De C.V.	100.00	100.00	Mexico	December	Manufacturing of automobile parts
HANWHA AERO ENGINES.,LTD	100.00	100.00	Vietnam	December	Manufacturing of aircraft parts
Hanwha America Development Inc.	100.00	100.00	USA	December	Real estate business
Hanwha Asset Management (USA) Ltd.	100.00	100.00	USA	December	Domestic and foreign securities investment
Hanwha USA Partners I GP LLC	100.00	-	USA	December	Financial investment
HANWHA ASSET MANAGEMENT PTE. LTD.	100.00	100.00	Singapore	December	Asset management
Hanwha AZDEL, Inc.	100.00	100.00	USA	December	Manufacturing of automobile parts
Hanwha Chemical (Ningbo) Co., Ltd.	100.00	100.00	China	December	Compound manufacturing
Hanwha Chemical (Thailand) Co., Ltd.	99.99	99.99	Thailand	December	Compound manufacturing
HANWHA CHEMICAL INDIA PRIVATE LIMITED	99.99	99.99	India	April	Sale and purchase of petrochemicals and photovoltaic products
Hanwha Chemical Malaysia Sdn. Bhd.	100.00	100.00	Malaysia	December	Sale of petrochemicals
Hanwha Europe GmbH	100.00	100.00	Germany	December	Trading
Hanwha Holdings(USA), Inc.	100.00	100.00	USA	December	Holding company
Hanwha Hong Kong Co., Ltd.	100.00	100.00	Hong Kong	December	Trading
Hanwha International Corp.	100.00	100.00	USA	December	Holding company

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HANWHA INTERNATIONAL INDIA PVT., LT	99.99	99.99	India	December	Trading
Hanwha International LLC.	100.00	100.00	USA	December	Trading
Hanwha Life Insurance Company Limited. (Vietnam)	100.00	100.00	Vietnam	December	Life insurance
PT Lippo General Insurance Tbk	74.36	-	Indonesia	December	Insurance and pension services
Hanwha Machinery Americas, Inc.	100.00	100.00	USA	December	Sale of machine tool
Hanwha Machinery Corporation	100.00	100.00	USA	December	Holding company
Hanwha Mining Services Australia Pty., Ltd	100.00	100.00	Australia	December	Gunpowder services and explosives and blasting
Hanwha Mining Services Chile SpA	100.00	100.00	Chile	December	Gunpowder services and explosives and blasting
Hanwha Parcel O LLC	100.00	100.00	USA	December	Real estate development
Hanwha Property USA LLC	100.00	100.00	USA	December	Real estate business
Hanwha PVPLUS LLC	100.00	100.00	USA	December	Photovoltaic power generation investment
Hanwha Q CELLS America Inc.	100.00	100.00	USA	December	Sale of photovoltaic products
Hanwha Q CELLS America Project Holdings	100.00	100.00	USA	December	Photovoltaic project investment
Hanwha Q CELLS Americas Holdings. Corp.	100.00	100.00	USA	December	Photovoltaic business
Wagon Wheel Energy Storage LLC	100.00	-	USA	December	Photovoltaic power generation
28909 AVE WILLIAMS PROJECT, LLC	100.00	-	USA	December	Photovoltaic power generation
84000 TERRA LAGO PKWY PROJECT, LLC	100.00	-	USA	December	Photovoltaic power generation
Viola Storage Project LLC	100.00	-	USA	December	Photovoltaic development
Tucannon River Solar LLC	100.00	-	USA	December	Photovoltaic development
Sundown Storage, LLC	100.00	-	USA	December	Photovoltaic power generation
Muddy Creek Energy Park LLC	100.00	-	USA	December	Photovoltaic power generation
Hanwha Q CELLS Canada, Corp.	100.00	100.00	Canada	December	Sale of photovoltaic products
Hanwha Q CELLS Chile SpA	100.00	100.00	Chile	December	Construction and sale of photovoltaic power generation system
Hanwha Q CELLS Co., Ltd.	100.00	100.00	United Kingdom	December	Manufacturing and sale of photovoltaic products
Hanwha Q CELLS(Qidong) Co., Ltd.	100.00	100.00	China	December	Manufacturing of silicon ingot
Hanwha Q CELLS France SAS	100.00	100.00	France	December	Photovoltaic business
Hanwha Q CELLS Gmbh	100.00	100.00	Germany	December	Manufacturing of photovoltaic products
Hanwha Q CELLS Hong Kong Limited	100.00	100.00	Hong Kong	December	Investment and international supply
Hanwha Q CELLS Investment Co., Ltd.	100.00	100.00	United Kingdom	December	Holding company
Hanwha Japan CO., LTD.(formerly, Hanwha Q CELLS Japan Co., Ltd.	100.00	100.00	Japan	December	Trading

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Hanwha Q CELLS Malaysia Sdn. Bhd.	100.00	100.00	Malaysia	December	Manufacturing of photovoltaic products
HANWHA Q CELLS SOLAR POWER SDN. BHD.	100.00	100.00	Malaysia	December	EPC business
Hanwha Q CELLS Til Uno SPA	100.00	100.00	Chile	December	Construction and sale of photovoltaic system
Hanwha Q CELLS Turkey	100.00	100.00	Turkey	December	Construction and sale of photovoltaic power generation system
Hanwha Q CELLS USA, INC.	100.00	100.00	USA	December	Photovoltaic business
Hanwha Q CELLS(Nantong) Co., Ltd.	100.00	100.00	China	December	Manufacturing and sale of photovoltaic products
Hanwha Resources (Canada) Ltd.	100.00	100.00	Canada	December	Resource development
Hanwha Saudi Contracting Co., Ltd.	100.00	100.00	Saudi Arabia	December	Construction
Hanwha Solar Electric Power Engineering Co., Ltd.	100.00	100.00	China	December	Construction of photovoltaic power generation facilities
Hanwha Solar Power Kitsuki G.K. ²	1.00	1.00	Japan	December	Photovoltaic power generation
Hanwha SolarOne (Laiyang) Co., Ltd	100.00	100.00	China	December	Photovoltaic power generation
Hanwha SolarOne GmbH	100.00	100.00	Germany	December	Sale of photovoltaic products
Hanwha SolarOne Investment Holding Ltd.	100.00	100.00	United Kingdom	December	Holding company
Hanwha SolarOne Power Generation (Wuxi) Co., Ltd.	100.00	100.00	China	December	Photovoltaic business
Hanwha Solarone(beipiao)Co.,Ltd	100.00	100.00	China	December	Sale of compressor and service materials
Hanwha Q CELLS Technology (Shanghai) Co., Ltd.	100.00	100.00	China	December	Sale of photovoltaic products
Hanwha Techm Hungary Zrt.	97.21	97.21	Hungary	December	Leasing service of real estate and supply of utilities
Fabless-Pioneer Holdings, Inc.	62.03	-	USA	December	Non-memory and other electronic integrated circuit manufacturing
HANWHA VISION AMERICA, INC.(formerly, HANWHA TECHWIN AMERICA, INC.)	100.00	100.00	USA	December	Sale of CCTV
A123 Corporation	97.86	-	USA	December	Holding company
Neubla UK Ltd	100.00	-	United Kingdom	December	Software development
Neubla Korea Co., Ltd.	100.00	-	USA	December	Software development
HANWHA VISION MEXICO	100.00	-	Mexico	December	Sale and others
Hanwha Techwin Automation Americas, Inc.	100.00	100.00	USA	December	Sale and others
HANWHA TECHWIN AUTOMATION VIETNAM CO.,LTD	100.00	100.00	Vietnam	December	Sale
HANWHA VISION EUROPE LIMITED(formerly, Hanwha Techwin Europe Limited)	100.00	100.00	United Kingdom	December	Sale of CCTV
HANWHA VISION MEA FZE(formerly, Hanwha Techwin Middle East FZE)	100.00	100.00	UAE	December	Sale
HANWHA VISION VIETNAM COMPANY	100.00	100.00	Vietnam	December	Manufacturing

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LIMITED(formerly, Hanwha Techwin Security Vietnam)					
Hanwha Village Market, LLC	100.00	100.00	USA	December	Real estate development
Hanwha West Properties LLC	100.00	100.00	USA	December	Real estate development
HMS AUSTRALIA OPERATIONS PTY LTD	100.00	100.00	Australia	December	Gunpowder services and explosives and blasting
HMS AUSTRALIA PROPERTY HOLDINGS PTY LTD	100.00	100.00	Australia	December	Land leasing service
HQC Rock River Solar Holdings LLC	100.00	100.00	USA	December	Photovoltaic business
HQC Rock River Solar Power Generation Station LLC	100.00	100.00	USA	December	Photovoltaic business
Huoqiu Hanrui New Energy Power Generation co. Ltd	100.00	100.00	China	December	Photovoltaic business
HW SOLAR POWER 3 G.K.	100.00	100.00	Japan	December	Photovoltaic power generation
HW SOLAR POWER 6 G.K.	100.00	100.00	Japan	December	Photovoltaic power generation
HW SOLAR POWER 8 G.K. ²	0.66	0.66	Japan	December	Photovoltaic power generation
Q ENERGY Germany Komplementar GmbH(formerly, KMPT Solarpark Verwaltung GmbH)	100.00	100.00	Germany	December	Photovoltaic business
LDE Corporation PTY LTD	100.00	100.00	Australia	December	Mine development
LDE HOLDINGS PTY LTD	100.00	100.00	Australia	December	Holding company
LENEX Co., Ltd.	100.00	100.00	Japan	December	Sale of photovoltaic products
LENEX MIRAI G.K.	100.00	-	Japan	December	Photovoltaic power generation
LLP Zharyk Zol Company 2007	100.00	100.00	Kazakhstan	December	Investment of real estate (SPC)
Maxxsol 01 srl	100.00	100.00	Italy	December	Photovoltaic power generation
PT. Bara Bumi International	100.00	100.00	Indonesia	December	Coal sales
PT. Hanwha Life Insurance Indonesia	99.61	99.61	Indonesia	December	Life insurance
PT. Hanwha Mining Services Indonesia	100.00	100.00	Indonesia	December	Gunpowder services and explosives and blasting
Q Power Solution GmbH(formerly, SFH Solarpark GmbH)	100.00	100.00	Germany	December	Photovoltaic business
Techwin Engineering Center	100.00	100.00	Japan	December	Research and development of industrial equipment
Tecsol Srl	100.00	100.00	Italy	December	Photovoltaic power generation
Hanwha Momentum AB	100.00	-	Sweden	December	Trading
Universal Bearings LLC.	100.00	100.00	USA	December	Bearing manufacturing
WSE Bradley Road Ltd	100.00	100.00	United Kingdom	December	Photovoltaic power generation

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Hanwha Q CELLS USA Corp.	100.00	100.00	USA	December	Photovoltaic business
Project Astro Holdco LLC	100.00	-	USA	December	Photovoltaic business
HSESM American Union LLC	100.00	100.00	USA	December	Photovoltaic business
HSESM PlanadaES LLC	100.00	100.00	USA	December	Photovoltaic business
HSESM LeGrandUHS LLC	100.00	100.00	USA	December	Photovoltaic business
HQ MEX, LLC	100.00	100.00	Mexico	December	Photovoltaic business
HQ MEXICO HOLDINGS S DE RL DE CV	100.00	100.00	Mexico	December	Photovoltaic business
HQ MEXICO Solar I S DE RL DE CV	100.00	100.00	Mexico	December	Photovoltaic business
HQ MEXICO Solar II S DE RL DE CV	100.00	100.00	Mexico	December	Photovoltaic business
Kalaeloa Renewable Energy Park, LLC	100.00	100.00	USA	December	Photovoltaic business
HSEA HVES, LLC	100.00	100.00	USA	December	Photovoltaic business
Solar Monkey 1, LLC	100.00	100.00	USA	December	Photovoltaic business
Solar Monkey 2, LLC	100.00	100.00	USA	December	Photovoltaic business
HQC Maywood, LLC	100.00	100.00	USA	December	Photovoltaic business
Hanwha Q CELLS EPC USA, LLC	100.00	100.00	USA	December	Photovoltaic business
Hanwha Q CELLS Servicios Comerciales, S DE RL DE CV	100.00	100.00	Mexico	December	Photovoltaic business
HANWHA DEFENSE AUSTRALIA PTY LTD	100.00	100.00	Australia	December	Military equipment
Hanwha Systems Vietnam Co., Ltd.	100.00	100.00	Vietnam	December	Integrated advisory, construction and management of computer systems
Hanwha Futureproof Corp	100.00	-	USA	December	Holding company
Hanwha Futureproof LLC	100.00	-	USA	December	Holding company
TransGrid Energy LLC	100.00	-	USA	December	Photovoltaic business, Battery and Holding company
Atlas Solar, LLC	100.00	-	USA	December	Photovoltaic business and Battery
Silver Peak Solar LLC	100.00	-	USA	December	Photovoltaic business and Battery
Atlas Solar II, LLC	100.00	-	USA	December	Photovoltaic business and Battery
Atlas Solar IV, LLC	100.00	-	USA	December	Photovoltaic business and Battery
Atlas Solar Retailer, LLC	100.00	-	USA	December	Photovoltaic business and Battery
Atlas VII, LLC	100.00	-	USA	December	Photovoltaic business and Battery
ATLAS IX LLC	100.00	-	USA	December	Photovoltaic business and Battery
ATLAS VIII LLC	100.00	-	USA	December	Photovoltaic business and Battery
Q CELLS DO BRASIL CONSULTORIA EMPRESARIAL LTDA	100.00	100.00	Brazil	December	Photovoltaic business
Q.ENEST Holdings Co., Ltd.(formerly, LENEX	100.00	100.00	Japan	December	Photovoltaic business

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Holdings Co., Ltd.)					
LENEX Elettric Power G.K.	100.00	100.00	Japan	December	Photovoltaic business
Carrot Co., Ltd.	55.89	50.58	Korea	December	Insurance and pension services
Hanwha Estate Service Co., Ltd.	100.00	100.00	Korea	December	Business facilities management and business support services
Hanwha Aerospace USA	100.00	100.00	USA	December	Manufacturing of aircraft engine and parts
HANWHA AEROSPACE JAPAN GK	100.00	-	Japan	December	Real estate business
EDAC Technologies Intermediate Company	100.00	100.00	USA	December	Manufacturing of aircraft engine and parts
Hanwha Aerospace USA LLC	100.00	100.00	USA	December	Manufacturing of aircraft engine and parts
EBTEC Corporation	100.00	100.00	USA	December	Manufacturing of aircraft engine and parts
APEX Machine Tool Company, Inc.	100.00	100.00	USA	December	Manufacturing of aircraft engine and parts
Gros-Ite Industries Inc.	100.00	100.00	USA	December	Manufacturing of aircraft engine and parts
EDAC ND, Inc	100.00	100.00	USA	December	Manufacturing of aircraft engine and parts
HANWHA AEROSPACE EUROPE	100.00	-	Poland	December	Military Supplies business
QSUN 25 Sp. z o.o.(formerly. Silesian Sun Energy Sp. z o.o.)	100.00	100.00	Poland	December	Photovoltaic business
PV Jagodne Sp. z.o.o.	100.00	100.00	Poland	December	Photovoltaic business
INCOGNITWORLD, LDA.	100.00	100.00	Portugal	December	Photovoltaic business
Pinetree Securities Corporation	99.99	98.97	Vietnam	December	Stock brokerage
HHR Development B GK	100.00	100.00	Japan	December	Other services
ARBECA SOLAR SLU	100.00	100.00	Spain	December	Photovoltaic business
REUS SOLAR SLU	100.00	100.00	Spain	December	Photovoltaic business
CASTELLNOU SOLAR SLU	100.00	100.00	Spain	December	Photovoltaic business
VECIANA SOLAR SLU	100.00	100.00	Spain	December	Photovoltaic business
CASTELLDANS SOLAR SLU	100.00	100.00	Spain	December	Photovoltaic business
Malhada Green S.A	100.00	100.00	Portugal	December	Photovoltaic business
CASTEDO GREEN, LDA	80.00	-	Portugal	December	Photovoltaic business
ALA Green LDA	80.00	-	Portugal	December	Photovoltaic business
Sunergetic Holding B.V	66.03	-	Netherlands	December	Photovoltaic business
Sunergetic IP B.V	100.00	-	Netherlands	December	Photovoltaic business
Sunergetic Maintenance B.V	100.00	-	Netherlands	December	Photovoltaic business
Sunergetic B.V	100.00	-	Netherlands	December	Photovoltaic business
Zelfopwekken.nl B.V	100.00	-	Netherlands	December	Photovoltaic business
Jeju Ocean Science Museum Corporation	94.80	94.80	Korea	December	Operation of botanical garden and zoo
The Second Yong In Techno Valley Co., Ltd.	75.00	75.00	Korea	December	Real estate business
REC date center Co., Ltd.	100.00	-	Korea	December	Real estate business

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Cheonjangsan Pung Ryeok Corporation	100.00	100.00	Korea	December	Wind power generation
Yeonggwang Chilhae Offshore Wind Power Co., Ltd.	100.00	-	Korea	December	Wind power generation
H Properties TMK	100.00	100.00	Japan	September	Other services
Rippey Solar Holdings, LLC	100.00	100.00	USA	December	Photovoltaic power development
Coniglio Solar Holdings, LLC	100.00	100.00	USA	December	Photovoltaic power development
Kellam Solar Holdings, LLC	100.00	100.00	USA	December	Photovoltaic power development
HQC Solar Holdings 1, LLC	100.00	100.00	USA	December	Photovoltaic power development
Copper Storage LLC	100.00	-	USA	December	Photovoltaic power development
Galibier Storage LLC	100.00	-	USA	December	Photovoltaic power development
URSA SOLAR, LLC	100.00	-	USA	December	Photovoltaic power development
POLARIS SOLAR, LLC	100.00	-	USA	December	Photovoltaic power development
ARCAS SOLAR, LLC	100.00	-	USA	December	Photovoltaic power development
Moffett Solar II, LLC	100.00	-	USA	December	Photovoltaic power development
White Pine Grove Solar, LLC	100.00	-	USA	December	Photovoltaic power development
SAPPHIRE ENERGY STORAGE, LLC	100.00	-	USA	December	Photovoltaic power development
RUBY ENERGY STORAGE, LLC	100.00	-	USA	December	Photovoltaic power development
GEMMA ENERGY STORAGE, LLC	100.00	-	USA	December	Photovoltaic power development
DAPHNE ENERGY STORAGE, LLC	100.00	-	USA	December	Photovoltaic power development
CRYSTAL ENERGY STORAGE, LLC	100.00	-	USA	December	Photovoltaic power development
CORAL ENERGY STORAGE, LLC	100.00	-	USA	December	Photovoltaic power development
Nerano Energy Storage, LLC	100.00	-	USA	December	Photovoltaic power development
Viburnum Energy Storage, LLC	100.00	-	USA	December	Photovoltaic power development
Highbush Energy Storage, LLC	100.00	-	USA	December	Photovoltaic power development
Carver Solar I, LLC	100.00	-	USA	December	Photovoltaic power development
Bracero Pecan Storage LLC	100.00	-	USA	December	Photovoltaic power development
Fairway Storage LLC	100.00	-	USA	December	Photovoltaic power development
GREEN RIC ENERGY, S.L.	100.00	100.00	Spain	December	EPC construction and

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						engineering
LASTRAFI POWER, S.L.	100.00	100.00	Spain	December	EPC construction and engineering	
HESTIA SUN, S.L.	100.00	100.00	Spain	December	EPC construction and engineering	
CAPRICORNIO ENERGY, S.L.	100.00	100.00	Spain	December	EPC construction and engineering	
SPRING POWER, S.L.	100.00	100.00	Spain	December	EPC construction and engineering	
Seoulyeokbukbuyeoksegwon Development Co.	60.00	60.00	Korea	December	Real estate business	
HANWHA PHASOR LTD.	100.00	100.00	United Kingdom	December	Manufacturing of wireless communication equipment	
Pinetree Securities Pte. Ltd.	100.00	100.00	Singapore	December	Securities business	
GALGO POWER, S.L.	100.00	100.00	Spain	December	EPC construction and engineering	
LEBREL POWER, S.L.	100.00	100.00	Spain	December	EPC construction and engineering	
PODENCO POWER, S.L.	100.00	100.00	Spain	December	EPC construction and engineering	
West Ochang Techno Valley Co., Ltd.	78.00	78.00	Korea	December	Real estate business	
HQC PORTUGAL HOLDINGS, LDA	100.00	100.00	Portugal	December	EPC construction and engineering	
QSUN PORTUGAL 2, UNIPessoal LDA	100.00	100.00	Portugal	December	EPC construction and engineering	
QSUN PORTUGAL 3, UNIPessoal LDA	100.00	100.00	Portugal	December	EPC construction and engineering	
QSUN PORTUGAL 4, UNIPessoal LDA	100.00	100.00	Portugal	December	EPC construction and engineering	
QSUN PORTUGAL 5, UNIPessoal LDA	100.00	100.00	Portugal	December	EPC construction and engineering	
QSUN PORTUGAL 6, UNIPessoal LDA	100.00	100.00	Portugal	December	EPC construction and engineering	
QSUN PORTUGAL 7, UNIPessoal LDA	100.00	100.00	Portugal	December	EPC construction and engineering	
Q ENERGY Europe SPAIN HOLDINGS, S.L.U.(formerly, Q CELLS SPAIN HOLDINGS, S.L.)	100.00	100.00	Spain	December	EPC construction and engineering	
Taurus HoldCo. S.L.	100.00	-	Spain	December	EPC construction and engineering	
Casoldep, S.L.U.	100.00	-	Spain	December	EPC construction and engineering	
Terrapower Global Energy, S.L.U.	100.00	-	Spain	December	EPC construction and engineering	
Portas 523 Asset Management , SL	100.00	-	Spain	December	EPC construction and engineering	
HANWHA INTERNATIONAL VIETNAM	100.00	100.00	Vietnam	December	Trading	
Hanwha Financial Technology Company Limited	100.00	100.00	Vietnam	December	Digital solutions	
H FOUNDATION PTE. LTD.	100.00	100.00	Singapore	December	Holding company	

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VALS ENERGY POWER, S.L.	100.00	100.00	Spain	December	EPC construction and engineering
BOLERO ENERGY, S.L.	100.00	100.00	Spain	December	EPC construction and engineering
Growing Energy Labs, Inc.	100.00	100.00	USA	December	Energy management system
INCOGNITWORLD 2, UNIPessoal LDA	100.00	100.00	Portugal	December	EPC construction and engineering
INCOGNITWORLD 3, UNIPessoal LDA	100.00	100.00	Portugal	December	EPC construction and engineering
INCOGNITWORLD 4, UNIPessoal LDA	100.00	100.00	Portugal	December	EPC construction and engineering
INCOGNITWORLD 5, UNIPessoal LDA	100.00	100.00	Portugal	December	EPC construction and engineering
MALHADA GREEN 2, UNIPessoal LDA	100.00	100.00	Portugal	December	EPC construction and engineering
ALDGATE EAST INVESTMENTS, SL	70.00	70.00	Spain	December	EPC construction and engineering
ALFAZ DIRECTORSHIP, SL	70.00	70.00	Spain	December	EPC construction and engineering
ALQUIZAR INVESTMENTS, SL	70.00	70.00	Spain	December	EPC construction and engineering
ANNAPURNA SERVICIOS EMPRESARIALES, SL	70.00	70.00	Spain	December	EPC construction and engineering
BENIF INVESTMENTS, SL	70.00	70.00	Spain	December	EPC construction and engineering
BURETE DIRECTORSHIP, SL	70.00	70.00	Spain	December	EPC construction and engineering
CABUYA CORPORATE SERVICES, SL	70.00	70.00	Spain	December	EPC construction and engineering
CANARY WHARF INVESTMENTS, SL	70.00	70.00	Spain	December	EPC construction and engineering
CANNING TOWN INVESTMENTS, SL	70.00	70.00	Spain	December	EPC construction and engineering
COMBA DIRECTORSHIP, SL	70.00	70.00	Spain	December	EPC construction and engineering
CONVENT GARDEN INVESTMENTS, SL	70.00	70.00	Spain	December	EPC construction and engineering
DICKSON SERVICIOS EMPRESARIALES, SL	70.00	70.00	Spain	December	EPC construction and engineering
EMPER INVESTMENTS, SL	70.00	70.00	Spain	December	EPC construction and engineering
ENDINO SERVICIOS EMPRESARIALES, SL	70.00	70.00	Spain	December	EPC construction and engineering
GARDAYA INVESTMENTS, SL	70.00	70.00	Spain	December	EPC construction and engineering
KADOK CORPORATE SERVICES, SL	70.00	70.00	Spain	December	EPC construction and engineering
KAMPALA CORPORATE SERVICES, SL	70.00	70.00	Spain	December	EPC construction and engineering
MONTALBAN DIRECTORSHIP, SL	70.00	70.00	Spain	December	EPC construction and engineering

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NEPAL SERVICIOS EMPRESARIALES, SL	70.00	70.00	Spain	December	EPC construction and engineering
OTERO DIRECTORSHIP, SL	70.00	70.00	Spain	December	EPC construction and engineering
CLAVE DE SOL ENERGY, S.L.U	100.00	100.00	Spain	December	EPC construction and engineering
IRON POWER ENERGY, S.L.U	100.00	100.00	Spain	December	EPC construction and engineering
LINE ENERGY, S.L.U	100.00	100.00	Spain	December	EPC construction and engineering
PALOMA POWER, S.L.	100.00	100.00	Spain	December	EPC construction and engineering
HAMC Holdings Corp.	100.00	100.00	USA	December	Holding company
H-Techno Valley Co., Ltd	80.00	80.00	Korea	December	Real estate business
Youngam Q Power Solarfarm 1Co., Ltd.	100.00	100.00	Korea	December	Photovoltaic business
Daejeon Yeoksekwon Development PFV Co., Ltd.	60.00	60.00	Korea	December	Real estate business
AZOR POWER SL	100.00	100.00	Spain	December	EPC Construction
Espardell Directorship, SL	70.00	70.00	Spain	December	EPC Construction
Aqua planet Co., Ltd.	100.00	100.00	Korea	December	Business support
Enterprise Blockchain Co., Ltd.	100.00	100.00	Korea	December	Data processing
HANWHA DEFENSE USA, INC.	100.00	100.00	USA	December	Selling military equipment
Yeongwol Cheonpyung Pung Ryeok Corporation	100.00	100.00	Korea	December	Wind power generation
BoryeongNokdo Offshore Windpower Corporation	100.00	100.00	Korea	December	Wind power generation
ANDAAL EEDISSIJE13HOILBANSAMO REAL ESTATE INVESTMENT HOESA CO.	98.36	98.36	Korea	December	Development
ANDAAL EEDISSIJE12HOILBANSAMO REAL ESTATE INVESTMENT HOESA CO.	61.00	61.00	Korea	December	Development
Anseong Techno Logistics Co., Ltd.	100.00	100.00	Korea	December	Transport
H Techno Logistics Co., Ltd.	100.00	-	Korea	December	Transport, warehouse and real estate business
Hanwha Life Financial Service. Co, Ltd	88.89	100.00	Korea	December	Insurance agency and brokerage
Q ENEST Denki Co., Ltd	100.00	100.00	Japan	December	Selling electricity
CONIGLIO SOLAR CLASS B, LLC	100.00	100.00	USA	December	EPC construction and engineering
Johnson City Solar, LLC	100.00	100.00	USA	December	EPC construction and engineering
Johnson City Storage, LLC	100.00	100.00	USA	December	EPC construction and engineering
Plateau Solar, LLC	100.00	100.00	USA	December	EPC construction and engineering
Plateau Storage, LLC	100.00	100.00	USA	December	EPC construction and engineering
Purvis Solar, LLC	100.00	100.00	USA	December	EPC construction and engineering
Purvis Storage, LLC	100.00	100.00	USA	December	EPC construction and

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						engineering
NUN SUN POWER S.L.	100.00	100.00	Spain	December	EPC construction and engineering	
ISIS SUN POWER S.L.	100.00	100.00	Spain	December	EPC construction and engineering	
DONALLY CORPORATE SERVICES, SL	70.00	70.00	Spain	December	EPC construction and engineering	
FAIRLEAD CORPORATE SERVICES, SL	70.00	70.00	Spain	December	EPC construction and engineering	
FFNEV DESARROLLORS ESPANA I, SL	70.00	70.00	Spain	December	EPC construction and engineering	
FFNEV DESARROLLORS ESPANA II, SL	70.00	70.00	Spain	December	EPC construction and engineering	
NORWOOD CORPORATE SERVICES, S.L.	70.00	70.00	Spain	December	EPC construction and engineering	
DUCLO, INC.	100.00	100.00	USA	December	Software development	
The Tastable Co., Ltd.	100.00	100.00	Korea	December	Restaurant	
Vanila Studio Co., Ltd.	100.00	100.00	Korea	December	Application software development and supply	
Hanwha Systems USA Corporation	100.00	100.00	USA	December	Other wireless communication equipment manufacturer	
Hanwha Digital Inc.	100.00	-	USA	December	Data processing, hosting, and related services	
EBC GLOBAL PTE. LTD.	100.00	-	Singapore	December	Software and application devleopment	
HANWHA Q CELLS US O&M LLC	100.00	100.00	USA	December	Photovoltaic business	
Goheung Q Power Solarfarm 1 Co., Ltd.	100.00	100.00	Korea	December	Photovoltaic business	
HANWHA SOLUTIONS USA HOLDINGS	100.00	100.00	USA	December	Holding company	
HSHC NAM INV LLC	100.00	100.00	USA	December	Holding company	
HSHC LIBRA INV LLC	100.00	100.00	USA	December	Holding company	
HSHC BIO INV LLC	100.00	-	USA	December	Holding company	
Hanwha Cimarron LLC	100.00	100.00	USA	December	Manufacturing	
Hanwha Essential Co., Ltd.(formerly, WOS Inc.)	100.00	100.00	Korea	December	Manufacturing	
Hanwha Advanced Materials USA Corp	100.00	100.00	USA	December	Energy management system	
HSHC FF INV LLC	100.00	100.00	USA	December	EPC construction and engineering	
HES America Ltd.	100.00	100.00	USA	December	Photovoltaic business	
Qcells Service Solutions, LLC	100.00	-	USA	December	Photovoltaic business	
Axia Solar Corp.	100.00	100.00	USA	December	Photovoltaic business	
EnFin Corp.	100.00	100.00	USA	December	Photovoltaic business	
EnFin Residential Solar Finance HoldCo LLC	100.00	-	USA	December	Installment Financing Business	
EnFin Residential Solar Finance I LLC	100.00	-	USA	December	Installment Financing Business	
EnFin Residential Solar Finance II LLC	100.00	-	USA	December	Installment Financing Business	

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HAU Newington Project LLC	100.00	100.00	USA	December	Photovoltaic business
HAU Cheshire Project LLC	100.00	100.00	USA	December	Photovoltaic business
VGES Project LLC	100.00	100.00	USA	December	Photovoltaic business
HQCA Grid Equity LLC	100.00	100.00	USA	December	Photovoltaic business
HQCA Energy Solutions LLC	100.00	100.00	USA	December	Photovoltaic business
220 MARK LN SOLAR PROJECT, LLC	100.00	-	USA	December	Photovoltaic business
HQCA CLEAN ENERGY SERVICES, LLC	100.00	-	USA	December	Photovoltaic business
Q Energy Mediterranee	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE BEL AIR SUD	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE BOIS DE L'AIGUILLE	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE Champs Carres S.A.R.L	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE CHAMPS PAILLE	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE CHARMONSEL	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE CHAUMES DES COMMUNES	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE Chesnots	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE COTE DES VAUZELLES	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE COTE RENARD	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE Croix des Trois	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE Croix du Picq	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE DE BRAQUETTE	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE DE CHATILLONNAIS	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE DE L'ESCUR	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE de Mirebellois	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE des Grunes S.A.R.L	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE Fleur du Nivernais S.A.R.L	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE FORET DE MARSANNE	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE FOSSE A LOUP	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE FRETTES	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE GRAND CERISIER	100.00	100.00	France	December	Wind and photovoltaic power

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					generation
CEPE GRANDS COMMUNAUX	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE HAUT PERRON	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE LA TIRROYE	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE LES LORETTES	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE LES VACANTS	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE MERELLES	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE MONT DE CONDY	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE NOUVELLOIS	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE NOYER BERGER	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE ORAIN	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE Plaine de Pericaud	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE Plo du Laurier	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE Sud vesoul SARL	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE TERRIERS DE LA POINTE	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE TROIS PROVINCES	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE VAL D'YONNE EN FORTERRE	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE Val de Vingeanne EST	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE VENTS DE LOIRE	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES PANIFOL(formerly, CEPES JUGE)	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES AUCHES	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES BASSE MONTAGNE	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES BOIS SOLEIL	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES BORY	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES CLOTRONS(formerly, CPES BRECHE)	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES CAHUZAC SUR ADOUR	100.00	100.00	France	December	Wind and photovoltaic power generation

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CPES BELIN BELIET(formerly, CPES CALENTA)	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES CAUSSES PERIGORD	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES CHAMPS DE LA COUR	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES CHAPUS	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES COURSIADA	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES COUSSEAU	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES CRASSIER LAUDUN	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES CROUEE	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES FONT DE LA LEVE	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES FONTANILLE	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES MOULINET(formerly, CPES GANDOLLE)	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES GARDIOLE	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES GENEBRE	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES GRAND OUSTATOU	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES GRIFFOUL	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES HOMME DE PIERRE	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES Juncarot	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES la Gineste	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES LAC DE CLOYES	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES LAC DE LONGCHAMPS	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES LAC DE ROUAN	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES LAROQUE	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES LASCOURS	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES LAURAGAIS	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES LE PLAN	100.00	100.00	France	December	Wind and photovoltaic power generation

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CPES LES CROUZOURETS	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES LIBAROS	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES LUE	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES MILHAT	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES MONDONNE	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES MORAS	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES MORILLON	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES MURES BASSES	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES OMBRIPARK	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES PASCARATE	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES PAYS THIBERIEN	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES PEROLERA	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES PERRIERE	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES PEYROLE LAC	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES PLACE ROYALE	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES PLAN DE BANON	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES RENARDEYRE	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES ROMEGUERAR	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES SABLE ROUGE	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES SAINT ANGE	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES SEBENS	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES SUR L 'EPINE	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES TALLER	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES THUILLIERES	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES TREMEGE	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES VIGORDANE FLOTTANT	100.00	100.00	France	December	Wind and photovoltaic power

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					generation
CPES MALAGA	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES VILLAGE SOLAIRE	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES VALLEE	100.00	-	France	December	Wind and photovoltaic power generation
CPES GOBELETS	100.00	-	France	December	Wind and photovoltaic power generation
CPES CARRIERE DU LEVANT	100.00	-	France	December	Wind and photovoltaic power generation
CPES NOUE LE LOUP	100.00	-	France	December	Wind and photovoltaic power generation
CPES DEVANT LES CHAUMES	100.00	-	France	December	Wind and photovoltaic power generation
CPES PIECES DES PREVOTS	100.00	-	France	December	Wind and photovoltaic power generation
CPES BARRAIL	100.00	-	France	December	Wind and photovoltaic power generation
CPES GRANDE LANDE	100.00	-	France	December	Wind and photovoltaic power generation
CPES CARRON	100.00	-	France	December	Wind and photovoltaic power generation
Cret meuron suisse	100.00	100.00	Switzerland	December	Wind and photovoltaic power generation
CSE AMPERE	100.00	100.00	France	December	Wind and photovoltaic power generation
CSE ARMAND	100.00	100.00	France	December	Wind and photovoltaic power generation
CSE COULOMB	100.00	100.00	France	December	Wind and photovoltaic power generation
CSE JOULE	100.00	100.00	France	December	Wind and photovoltaic power generation
CSE LECLANCHE	100.00	100.00	France	December	Wind and photovoltaic power generation
CSE PLANTE	100.00	100.00	France	December	Wind and photovoltaic power generation
CSE TARASCON	100.00	100.00	France	December	Wind and photovoltaic power generation
CSE VOLTA	100.00	100.00	France	December	Wind and photovoltaic power generation
LASCOVENT	100.00	100.00	France	December	Wind and photovoltaic power generation
Les Eoliennes Entre Loire et Rhone	80.00	80.00	France	December	Wind and photovoltaic power generation
Q Energy France SAS(Formerly, RES SAS)	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES LIGNE SOLAIRE HAUTE LANDE	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES MARDALOU	100.00	100.00	France	December	Wind and photovoltaic power generation

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NAUTILUS ENERGIES	100.00	100.00	France	December	Wind and photovoltaic power generation
CEPE BOIS DE LA LONDE	100.00	100.00	France	December	Wind and photovoltaic power generation
CPES REGEAUD(formerly, CPES LANDE DE MUSSET)	100.00	100.00	France	December	Wind and photovoltaic power generation
Larrey des Vignes	100.00	100.00	France	December	Wind and photovoltaic power generation
SPV LOCANERGY TWO	100.00	100.00	France	December	Wind and photovoltaic power generation
Q ENERGY Europe Germany Holdings GmbH(formerly, Q CELLS Germany Holdings GmbH)	100.00	100.00	Germany	December	Holding company
ENVIRIA IPP DevCO1 GmbH & Co. KG	100.00	100.00	Germany	December	Photovoltaic business
Q Energy Solutions SE	100.00	100.00	Germany	December	Photovoltaic business
Q Energy Real Estate GmbH	100.00	-	Germany	December	Real estate business
Q Energy Europe GmbH	100.00	100.00	Germany	December	Photovoltaic business
Hanwha Intelligence Co., Ltd.	50.77	50.77	Korea	December	Semiconductor sensor development
VISIONEXT CO., LTD.	100.00	100.00	Korea	December	Electronic integrated circuit manufacturer
HANWHA SYSTEMS UK LTD	100.00	100.00	United Kingdom	December	Holding company
Q.ENEST Power G.K.(formerly, LENEX ENERGY 1 G.K.)	100.00	100.00	Japan	December	Photovoltaic business
ASANBAEBANG DEVELOPMENT	70.00	70.00	Korea	December	Real estate business
Hero Claims Survey & Adjusting Co., Ltd.	70.00	85.10	Korea	December	Adjustment of damage
HCC HOLDINGS CORPORATION	51.00	51.00	Korea	December	Holding company
Hanwha NxMD Corporation	100.00	100.00	Korea	December	Manufacturing
Hanwha Advanced Materials Georgia Inc.	100.00	100.00	USA	December	Manufacturing
HESAL System Solutions USA LLC	100.00	100.00	USA	December	Photovoltaic business
HSNC NOV INV LLC	100.00	100.00	USA	December	Holding company
CPES MAGNILS	100.00	100.00	France	December	Photovoltaic business
VANI STUDIO VIETNAM COMPANY LIMITED	85.00	98.40	Vietnam	December	Application software development and supply
H-summit	100.00	100.00	Japan	December	Hotel business
Bauernenergie Solarpark Illmersdorf UG Co.KG	100.00	100.00	Germany	December	Photovoltaic business
Enviria IPP DevCo 2 GmbH & Co. KG	100.00	100.00	Germany	December	Photovoltaic business
ENVIRIA IPP DevCO3 GmbH & Co. KG	100.00	-	Germany	December	Photovoltaic business
DES Energy PV1 GmbH	100.00	100.00	Germany	December	Photovoltaic business
DES Energy Kom GmbH	100.00	100.00	Germany	December	Photovoltaic business
Aberdeen Corporate Services S.L.	100.00	100.00	Spain	December	Photovoltaic business
Albany Directorship, S.L.	100.00	100.00	Spain	December	Photovoltaic business
Amberes Corporate Services, S.L.	100.00	100.00	Spain	December	Photovoltaic business
Appleton Corporate Services, S.L.	100.00	100.00	Spain	December	Photovoltaic business

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VISIONEXT AMERICA INC.	100.00	100.00	USA	December	Non-memory semiconductor manufacturer
DP Real Estate America LLC	100.00	100.00	USA	December	Investment of real estate (SPC)
DP Real Estate Japan G.K.	100.00	-	Japan	December	Investment of real estate (SPC)
HSBC ZIP INV LLC	100.00	100.00	USA	December	Holding company
Sportpferde Galleria GmbH	100.00	100.00	Germany	December	Polysilicon manufacturing
NEXT STEP N DEVELOPMENT LLC	100.00	-	USA	December	Real estate business
Hanwha NxMD (Thailand) Co., Ltd.	100.00	100.00	Thailand	December	Polysilicon manufacturing
REC Silicon ASA ³	33.33	33.33	Norway	December	Polysilicon manufacturing
REC Silicon AS Norway	100.00	100.00	Norway	December	Polysilicon manufacturing
REC Solar AS Norway	100.00	100.00	Norway	December	Polysilicon manufacturing
REC Silicon Pte Ltd Singapore	100.00	100.00	Singapore	December	Polysilicon manufacturing
REC Silicon Inc USA	100.00	100.00	USA	December	Polysilicon manufacturing
REC Solar Greade Silicon LLC USA	100.00	100.00	USA	December	Polysilicon manufacturing
REC Advanced Silicon Materials LLC USA	100.00	100.00	USA	December	Polysilicon manufacturing
SatrechnInitiativeCo., Ltd. ³	33.63	20.00	Korea	December	Satellite system development and service
SI Analytics Co.,Ltd	72.98	89.20	Korea	December	Satellite system development and service
SI Imaging Services	65.91	62.50	Korea	December	Satellite system development and service
Enterprise Blockchain Inc.	100.00	100.00	USA	December	Other non-financial business
Alondra Foods Project, LLC	100.00	100.00	USA	December	Photovoltaic business
CPES EMOROTS	100.00	100.00	France	December	Renewable energy business
Deergrass Energy Storage LLC	100.00	100.00	USA	December	Photovoltaic power development
Ponderosa Energy Storage LLC	100.00	100.00	USA	December	Photovoltaic power development
Ryegrass Energy Park LLC	100.00	100.00	USA	December	Photovoltaic power development
CPES GARENNES	100.00	100.00	France	December	Renewable energy business
CEPE MELUSINE	100.00	100.00	France	December	Renewable energy business
CPES LA GRANDE GORGE	100.00	100.00	France	December	Renewable energy business
CPES MOUCHIT	100.00	100.00	France	December	Renewable energy business
CPES RADAR	100.00	100.00	France	December	Renewable energy business
CPES SIGNORET	100.00	100.00	France	December	Renewable energy business
CPES LES PLAINES de Haute Montagne	100.00	100.00	France	December	Renewable energy business
CPES MAS THIBERT	100.00	100.00	France	December	Renewable energy business
CPES CHENET	100.00	100.00	France	December	Renewable energy business
Lavender Storage Project LLC	100.00	100.00	USA	December	Photovoltaic power development
Project Bolt Holdco LLC	100.00	100.00	USA	December	Photovoltaic power development
DES Energy PV 2 GmbH & Co.KG	100.00	100.00	Germany	December	Photovoltaic power

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					generation
QCELLS ENABLE LLC	100.00	100.00	USA	December	Photovoltaic business
CDG BNS 136, LLC	100.00	100.00	USA	December	Photovoltaic business
CDG BNS Commerce, LLC	100.00	100.00	USA	December	Photovoltaic business
CDG Forest Mall, LLC	100.00	100.00	USA	December	Photovoltaic business
CDG MRP 136, LLC	100.00	100.00	USA	December	Photovoltaic business
WPL10 Solar, LLC	100.00	100.00	USA	December	Photovoltaic business
WPL4 Solar, LLC	100.00	100.00	USA	December	Photovoltaic business
Brainum Solar, LLC	100.00	100.00	USA	December	Photovoltaic business
BNS Willow Solar, LLC	100.00	100.00	USA	December	Photovoltaic business
Fairview Solar, LLC	100.00	100.00	USA	December	Photovoltaic business
CDG Innovo Queens, LLC	100.00	100.00	USA	December	Photovoltaic business
Carco Solar, LLC	100.00	100.00	USA	December	Photovoltaic business
Abbot Solar, LLC	100.00	100.00	USA	December	Photovoltaic business
Linden Solar, LLC	100.00	100.00	USA	December	Photovoltaic business
Maurice Solar, LLC	100.00	100.00	USA	December	Photovoltaic business
Bartlett JFK Solar, LLC	100.00	100.00	USA	December	Photovoltaic business
Bartlett Newark Solar, LLC	100.00	100.00	USA	December	Photovoltaic business
CDG Liberty Distributors, LLC	100.00	100.00	USA	December	Photovoltaic business
Q ENERGY (EUROPE) UK HOLDINGS LIMITED	100.00	100.00	United Kingdom	December	Holding company
Tomorrow Energy Ontwikkelung 31 B.V.	100.00	100.00	Netherlands	December	Photovoltaic business
Q ENERGY (EUROPE) ITALY HOLDINGS S.R.L.	100.00	-	Italy	December	Holding company
RENDE 1 S.R.L.	100.00	-	Italy	December	Photovoltaic business
Q ENERGY Europe NL Holdings B.V.	100.00	100.00	Netherlands	December	Holding company
QEE Solarpark Matzlow GmbH & Co. KG	100.00	100.00	Germany	December	Photovoltaic business
QEE Solarpark Garwitz GmbH & Co. KG	100.00	100.00	Germany	December	Photovoltaic business
QEE Solarpark Werneuchen GmbH & Co. KG	100.00	-	Germany	December	Photovoltaic business
QEE Solarpark Zobersdorf GmbH & Co. KG	100.00	-	Germany	December	Photovoltaic business
QEE Solarpark Rusterwerder GmbH & Co. KG	100.00	-	Germany	December	Photovoltaic business
CEPE Sapinois	100.00	100.00	France	December	Renewable energy business
CPES RIVAILLES	100.00	100.00	France	December	Renewable energy business
Hanwha Global Investment Corporation	100.00	100.00	USA	December	Manufacturing construction
Staghorn Energy Storage LLC	100.00	100.00	USA	December	Renewable energy business
CPES Volieres Charente	100.00	100.00	France	December	Renewable energy business
CPES Volieres Deux Sevres	100.00	100.00	France	December	Renewable energy business
CPES Montans	100.00	100.00	France	December	Renewable energy business
CPES Saint-Lys	100.00	100.00	France	December	Renewable energy business
Hanwha Cimarron Europe GmbH	100.00	100.00	Germany	December	Manufacturing
QCELLS FEDERAL SOLUTIONS, LLC	100.00	-	USA	December	Project development
Neptune Solar Energy Park LLC	100.00	-	USA	December	Photovoltaic power development

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Hadong Haetpinnaum Taeyanggwangbalkeon Co., Ltd.	100.00	100.00	Korea	December	Photovoltaic business
5 CUT ROAD SOLAR PROJECT LLC	100.00	100.00	USA	December	Photovoltaic business
1050 DAY HILL RD PROJECT, LLC	100.00	100.00	USA	December	Photovoltaic business
Hanwha Solutions Insight Holdings Corporation	100.00	100.00	USA	December	Holding company
HSIH NHH INV LLC	100.00	100.00	USA	December	Other non-financial business
C.P.E.S. Volieres Sarraguzan	100.00	100.00	France	December	Renewable energy business
Daffodil Storage Project LLC	100.00	100.00	USA	December	Manufacturing construction
Taormina Storage Project LLC	100.00	100.00	USA	December	Photovoltaic power development
HSHC AMP INV LLC	100.00	100.00	USA	December	Holding company
Hanwha Advanced Materials Corporation	52.76	52.76	Korea	December	Synthetic resin processing and others
Hanwha REIT Co., Ltd.	47.82	69.17	Korea	December	Other non-financial business
CE Cell Engineering GmbH	100.00	100.00	Germany	December	Photovoltaic business
LYNQTECH GmbH	64.97	64.97	Germany	December	Photovoltaic business
Zonnepark de Weijer B.V.	100.00	100.00	Netherlands	December	Photovoltaic business
Whinfield High Grange Solar Farm Limited	100.00	100.00	United Kingdom	December	Photovoltaic business
FLEXRACK by Qcells LLC(formerly, Solar FlexRack LLC)	80.10	80.10	USA	December	Photovoltaic power generation of materials and parts
Hanwha Q Cells Georgia, Inc	100.00	-	USA	December	Photovoltaic business
Hanwha Solutions Japan G.K.	100.00	-	Japan	December	Photovoltaic business

Beneficiary certificates

Hanwha Global Infrastructure Strategy Fund III	88.00	88.00	Korea	December	Special Asset Collective Investment Vehicle
Hanwha The 3rd Gyeongin highway Fund 1 ⁴	48.19	48.19	Korea	December	Special Asset Collective Investment Vehicle
Purple tip 1 Co., Ltd ⁵	-	-	Korea	December	Special Purpose Company (SPC)
Small Giants New Renewable Energy Innovation Fund	100.00	100.00	Korea	December	Investment Fund
2018 Hanwha New Industry Global Plus-up Fund	60.00	60.00	Korea	December	Investment Fund
Kyobo AXA Bong-dam Song-san Highway Private Investment Trust	85.21	85.21	Korea	December	Special Asset Collective Investment Vehicle
Loyal MJ 1st Co., Ltd ⁵	-	-	Korea	December	Special Purpose Company (SPC)
Loyal MJ 2nd Co., Ltd ⁵	-	-	Korea	December	Special Purpose Company (SPC)
Mirae Asset UK Gas Infra Private special asset Investment Trust No.1	83.78	83.78	Korea	April, October	Special Asset Collective Investment Vehicle
Mirae Asset Global Renewable Energy Private Special Asset Investment Trust No.2	100.00	100.00	Korea	December	Special Asset Collective Investment Vehicle
Mirae Asset Maps Global New Recycling Energy Private special asset Investment Trust	100.00	100.00	Korea	December	Special Asset Collective Investment Vehicle

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Blackrock Global Total Solution Investment Trust No.1	100.00	100.00	Korea	April	Security Collective Investment Vehicle
Simone Global Venture Private Investment Special No.1	100.00	100.00	Korea	May	Special Asset Collective Investment Vehicle
Kyobo AIM Seoul-Munsan Expressway Private Special Asset Investment Trust	100.00	93.33	Korea	December	Special Asset Collective Investment Vehicle
Asia Pacific 45 Vessel Investment Co., Ltd. ⁵	-	-	Korea	December	Vessels Investment Company
HSF 8th Co., Ltd. ⁵	-	-	Korea	September	Liquidation of Loans receivable (SPC)
Hana Daol HW Landchip Private real estate feeder investment Trust No.1	98.00	98.00	Korea	26th of each quarter	Real Estate Collective Investment Vehicle
Hanwha Global Macro Quant EMP Securities Investment Trust (Mixed - Indirect Type) C-F	88.92	-	Korea	June	Security Collective Investment Vehicle
Hanwha Hercules Advanced Country Active Securities Investment Trust (Equity) C-F	100.00	-	Korea	June	Security Collective Investment Vehicle
Hyundai Investbook North America Loan Receivables General Asset Investment Trust 32nd	100.00	-	Korea	June	Special Asset Collective Investment Vehicle
High GTAA General Asset Investment Trust 1st USD	100.00	-	Korea	August	Security Collective Investment Vehicle
Hanwha ASIA OPPORTUNITY Private Investment Trust No.1	100.00	100.00	Korea	May	Special Asset Collective Investment Vehicle
Hanwha GLOBAL CORPORATE PE STRATEGY Private Investment Trust No.2	100.00	100.00	Korea	December	Special Asset Collective Investment Vehicle
Hanwha GLOBAL CORPORATE PE STRATEGY Private Investment Trust No.1	100.00	100.00	Korea	December	Special Asset Collective Investment Vehicle
Hanwha GLOBAL CREDIT STRATEGY Private Investment Trust No.1	100.00	100.00	Korea	The end of each quarter	Security Collective Investment Vehicle
Hanwha GLOBAL INFRASTRUCTURE STRATEGY No.2	100.00	100.00	Korea	December	Special Asset Collective Investment Vehicle
Hanwha GLOBAL INFRASTRUCTURE STRATEGY No.1	100.00	100.00	Korea	December	Special Asset Collective Investment Vehicle
Hanwha GLOBAL REAL ESTATE STRATEGY Private Investment Trust No.1	100.00	100.00	Korea	December	Real Estate Collective Investment Vehicle
Hanwha GLOBAL REAL ESTATE STRATEGY Private Investment Trust No.2	100.00	100.00	Korea	December	Real Estate Collective Investment Vehicle
Hanwha Lifestyle Private Investment Trust No.1	100.00	100.00	Korea	April	Special Asset Collective Investment Vehicle
Hanwha Vietnam OPPORTUNITY Private Investment Trust No.1	100.00	100.00	Korea	The end of each quarter	Security Collective Investment Vehicle
Hanwha Solar Development Private Investment Trust No.2 ⁴	50.00	50.00	Korea	December	Special Asset Collective Investment Vehicle
Hanwha AI Global Choice Private Investment Trust No.1	100.00	100.00	Korea	April	Security Collective Investment Vehicle
Hanwha AI Global Choice Private Investment Trust No.2	99.00	99.00	Korea	December	Security Collective Investment Vehicle
Hanwha DEBT STRATEGY Real Estate Trust No.6	100.00	100.00	Korea	March	Special Asset Collective Investment Vehicle
Hanwha LIFEPLUSTDF2030 equity investment	100.00	100.00	Korea	December	Special Asset Collective

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Trust C-F						Investment Vehicle
Hanwha LIFEPLUSTDF2035 equity investment Trust C-F	100.00	100.00	Korea	December		Special Asset Collective Investment Vehicle
Hanwha LIFEPLUSTDF2040 equity investment Trust C-F	100.00	100.00	Korea	December		Special Asset Collective Investment Vehicle
Hanwha LIFEPLUSTDF2045 equity investment Trust C-F	100.00	100.00	Korea	December		Special Asset Collective Investment Vehicle
Hanwha LTI Private equity investment Trust No.2[Infra]	90.57	90.57	Korea	The end of each quarter, June		Special Asset Collective Investment Vehicle
Hanwha LTI Infra Private equity investment Trust No.1	100.00	100.00	Korea	The end of each quarter, July		Special Asset Collective Investment Vehicle
Hanwha Gwangju Ringroad special asset investment trust(Infra) ⁴	50.00	50.00	Korea	The end of each quarter, June		Special Asset Collective Investment Vehicle
Hanwha Global Security Investment Trust for corporation only(Bond)C	96.10	96.10	Korea	December		Security Collective Investment Vehicle
Hanwha Vietnam Legend Security Investment trust(Stock) C-F	100.00	100.00	Korea	June		Security Collective Investment Vehicle
Hanwha Korea Legend 4th Industrial Revolution Investment trust(Stock) C-F	100.00	100.00	Korea	December		Security Collective Investment Vehicle
Hanwha Tricircle Infra Special Asset No.1	100.00	100.00	Korea	The end of each quarter, June		Special Asset Collective Investment Vehicle
Hanwha Tricircle Infra Special Asset No.3	95.00	95.00	Korea	The end of each quarter, July		Special Asset Collective Investment Vehicle
Hanwha Environment Love Private Investment Trust No.1 ⁴	50.00	50.00	Korea	The end of each quarter, June		Special Asset Collective Investment Vehicle
Hanwha Environment Love Private Investment Trust No.2 ⁴	40.30	40.30	Korea	The end of each quarter, July		Special Asset Collective Investment Vehicle
Hanwha AF 4 ⁵	-	-	Korea	November		Liquidation of Beneficiary certificates (SPC)
Hanwha AF 5 ⁵	-	-	Korea	November		Liquidation of Beneficiary certificates (SPC)
Invest Urge1 ⁵	-	-	Korea	December		Liquidation of Beneficiary certificates (SPC)
Shinsegye1 ⁵	-	-	Korea	December		Liquidation of Beneficiary certificates (SPC)
First M No.9 ⁵	-	-	Korea	December		Liquidation of Beneficiary certificates (SPC)
First M No.10 ⁵	-	-	Korea	December		Liquidation of Beneficiary certificates (SPC)
Hyundai invest global infra Special Asset Investment Trust 15	100.00	100.00	Korea	December		Special Asset Collective Investment Vehicle
Hanwha DEBT STRATEGY Private Special Asset Investment Trust Security 16	50.85	50.85	Korea	December		Special Asset Collective Investment Vehicle
ARIRANG US s-term A-rated corporate debts	71.43	82.03	Korea	December		Special Asset Collective Investment Vehicle
ARIRANG US L-term A-rated corporate debts ⁴	34.29	44.73	Korea	December		Special Asset Collective Investment Vehicle
2018 Hanwha IoT New Technology Venture Fund	67.08	73.67	Korea	December		Investment Fund
Hanwha Dream Fund 1	100.00	100.00	Korea	December		Investment Fund
2020 Hanwha Future Environment New	40.09	40.09	Korea	December		Special Asset Collective

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Technology Venture Fund ⁴						Investment Vehicle
Hanwha Smart Health Care New Growth Fund No.1 ⁴	20.00	20.00	Korea	December		Special Asset Collective Investment Vehicle
Hanwha Co-Investments Private Fund ⁴	50.00	50.00	Korea	December		Special Asset Collective Investment Vehicle
Phoenix mohyun Co., Ltd. ⁵	-	-	Korea	December		Liquidation of Beneficiary certificates (SPC)
Hanwha Wind-Solar Private Fund I ⁴	50.00	50.00	Korea	December		Special Asset Collective Investment Vehicle
Capstone Private Real Estate Fund 22	100.00	100.00	Korea	December		Special Asset Collective Investment Vehicle
Hanwha Lifeplus TDF2050 Balanced-Fund of Funds C-F	96.13	100.00	Korea	December		Special Asset Collective Investment Vehicle
Hanwha OCIO Solution Securities Fund (Balanced-FoFs) C-F	100.00	74.80	Korea	December		Special Asset Collective Investment Vehicle
Hanwha ARIRANG Japan Semiconductor Industry Solactive Securities Listing Index Investment Trust (Equity) ⁴	45.45	-	Korea	December		Special Asset Collective Investment Vehicle
Shinhan AIM Real Estate Private Fund 10	100.00	100.00	Korea	December		Special Asset Collective Investment Vehicle
Hanwha DEBT STRATEGY Real Estate Private Fund ³⁴	50.00	50.00	Korea	December		Special Asset Collective Investment Vehicle
Shinhan AIM Real Estate Private Fund 7	100.00	100.00	Korea	December		Special Asset Collective Investment Vehicle
IGIS Real Estate Private Fund 221	99.44	99.44	Korea	December		Special Asset Collective Investment Vehicle
EIGIS Global General Asset Real Estate Investment Trust 503	100.00	-	Korea	December		Special Asset Collective Investment Vehicle
EIGIS US General Asset Real Estate Investment Trust 529	99.69	-	Korea	December		Special Asset Collective Investment Vehicle
MiraeAsset MAPS Aqua Private Special Asset Investment Trust 1	100.00	100.00	Korea	December		Special Asset Collective Investment Vehicle
Hanwha Global Infrastructure Strategy Private Fund 4	73.79	73.79	Korea	December		Special Asset Collective Investment Vehicle
Hanwha Asia Growth Private Fund 1	100.00	100.00	Korea	December		Special Asset Collective Investment Vehicle
Macquarie Korea Global Infrastructure Debt Fund 5	100.00	100.00	Korea	December		Special Asset Collective Investment Vehicle
Invest auto the first ⁵	-	-	Korea	October		Liquidation of Beneficiary certificates (SPC)
Invest star the first ⁵	-	-	Korea	October		Liquidation of Beneficiary certificates (SPC)
YDHM Eagle 1ST CO., LTD. ⁵	-	-	Korea	December		Liquidation of Beneficiary certificates (SPC)
Shinhan CIP VIII PBN Professional Investment Type Private Security Investment Trust No.1(H)	99.90	99.90	Korea	December		Special Asset Collective Investment Vehicle
IN BEST SEJONG 3RD CO., LTD. ⁵	-	-	Korea	October		Liquidation of Beneficiary certificates (SPC)
YDHM Eagle 2ND CO., LTD. ⁵	-	-	Korea	December		Liquidation of Beneficiary certificates (SPC)

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ASIA GAON NURI 1ST CO., LTD. ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
NONHYEON VALUE AD 2ND CO., LTD. ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
INBEST POHANG 1ST CO., LTD. ⁵	-	-	Korea	November	Liquidation of Beneficiary certificates (SPC)
gwangjuchumdanyoungsangangjisan1st Co., Ltd. ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
Revelant First Co., Ltd. ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
MULTI FLEX SERIES 6TH CO., LTD. ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
INVEST JUNG Dong 1ST CO., LTD. ⁵	-	-	Korea	November	Liquidation of Beneficiary certificates (SPC)
JB GANGREUNG 1ST CO., LTD. ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
GREAT GEOJE 1ST CO., LTD. ⁵	-	-	Korea	November	Liquidation of Beneficiary certificates (SPC)
GREAT GEOJE 2ND CO., LTD. ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
EKO CITY 1ST CO., LTD. ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
ECO CITY SINCHON 2ND CO., LTD. ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
Jadeicheon 1st Co., Ltd. ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
hudcannon1st Co., Ltd. ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
Cosmo Luna Co., Ltd. ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
SLT Yeonsan Co., Ltd. ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
DIONYSOS EAGLE 1ST CO., LTD. ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
EUROPE GAONNURI 1ST CO., LTD. ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
TI NAMPO 1ST CO., LTD. ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
TI BUKNAE CO.,LTD ⁵	-	-	Korea	October	Liquidation of Beneficiary certificates (SPC)
T.I Jukyo Co., Ltd. ⁵	-	-	Korea	November	Liquidation of Beneficiary certificates (SPC)
INVEST JOCHIWON 1ST CO., LTD. ⁵	-	-	Korea	November	Liquidation of Beneficiary certificates (SPC)
Eco Songjeong Co., Ltd. ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
E MASTER 13RD CO., LTD. ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
Tetras Co.,Ltd ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
GF MIN 7TH CO., LTD. ⁵	-	-	Korea	December	Liquidation of Beneficiary

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						certificates (SPC)
CW DAEGU 2ND CO., LTD. ⁵	-	-	Korea	December		Liquidation of Beneficiary certificates (SPC)
THEMOST SINDAEBANG 1ST CO., LTD. ⁵	-	-	Korea	December		Liquidation of Beneficiary certificates (SPC)
INVEST DEOKPYEONG 1ST CO., LTD. ⁵	-	-	Korea	October		Liquidation of Beneficiary certificates (SPC)
INVEST HYANGNAM 1ST CO., LTD. ⁵	-	-	Korea	October		Liquidation of Beneficiary certificates (SPC)
Invest Gunsan 1st Co., Ltd. ⁵	-	-	Korea	October		Liquidation of Beneficiary certificates (SPC)
Aida North Cheonan 1st Co., Ltd. ⁵	-	-	Korea	December		Liquidation of Beneficiary certificates (SPC)
ADIAUIJEON 1ST CO., LTD. ⁵	-	-	Korea	December		Liquidation of Beneficiary certificates (SPC)
HANWHA GLOBAL INFRA 2ND CO., LTD. ⁵	-	-	Korea	October		Liquidation of Beneficiary certificates (SPC)
Palace Green Hwaseong Co., Ltd. ⁵	-	-	Korea	December		Liquidation of Beneficiary certificates (SPC)
AD ONE 8TH CO., LTD. ⁵	-	-	Korea	November		Liquidation of Beneficiary certificates (SPC)
The Most Songpa 1st Co., Ltd. ⁵	-	-	Korea	December		Liquidation of Beneficiary certificates (SPC)
TI Shipjeong Co., Ltd. ⁵	-	-	Korea	December		Liquidation of Beneficiary certificates (SPC)
TI CHEONGDAM CO., LTD. ⁵	-	-	Korea	November		Liquidation of Beneficiary certificates (SPC)
Hanwha Opportunity Specialized Investment Private Equity Investment Real Estate Investment Trust No. 1	100.00	100.00	Korea	December		Investment Fund
Smart Hanwha KDB Gyeonggi Carbon Neutral ESG Fund ⁴	24.27	24.27	Korea	December		Special Asset Collective Investment Vehicle
Hanwha LifePlus TIF(FoFs) C-F	100.00	100.00	Korea	December		Special Asset Collective Investment Vehicle
Hanwha LifeStyle Private Equity Fund 2	100.00	100.00	Korea	December		Special Asset Collective Investment Vehicle
ARIRANG KOFR Interest Rate	67.29	-	Korea	December		Special Asset Collective Investment Vehicle
Eugene Pomona Secondary Fund No.1	66.67	66.67	Korea	December		Special Asset Collective Investment Vehicle
Hanwha Global Corporate PE VC Strategy Private Fund 3	90.00	90.00	Korea	December		Special Asset Collective Investment Vehicle
Value System ESG Private Equity Fund	84.10	84.10	Korea	December		Special Asset Collective Investment Vehicle
LB Asia Specialized Investment-Type General Asset Real Estate Investment Trust 15th	99.51	-	Korea	December		Special Asset Collective Investment Vehicle
Hanwha Global Infrastructure Specialized Asset Investment-Type General Asset Investment Trust 19th	99.00	-	Korea	December		Special Asset Collective Investment Vehicle
M Plus Sky Specialized Investment-Type	100.00	-	Korea	December		Special Asset Collective

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General Asset Investment Trust 6-3rd					Investment Vehicle
INVEST UNSEO 1ST CO. ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
GREAT YAEUM 3RD CO., LTD. ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
ADIA GODEOK 1ST CO., LTD. ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
TI Aewol Co., Ltd. ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
Sky Tower First Co., Ltd. ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
TI SEUN CO., LTD. ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
HSF 15TH CO., LTD. ⁵	-	-	Korea	November	Liquidation of Beneficiary certificates (SPC)
ROYALDEOBEULYUEM CO., LTD. ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
TI EMTRY CO., LTD. ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
HANWHA GLOBAL INFRASTRUCTURE 3RD CO., LTD. ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
ECHO YAEUM 2ND CO., LTD. ⁵	-	-	Korea	October	Liquidation of Beneficiary certificates (SPC)
INBESEUTEUYANGSAN 1ST CO., LTD. ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
INBESEUTEUYUSA 1ST CO., LTD. ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
Invest Hanho 1st ⁵	-	-	Korea	November	Liquidation of Beneficiary certificates (SPC)
Theta Story 1st ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
Tiger Park Dal 1st ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
HSF 17th ⁵	-	-	Korea	October	Liquidation of Beneficiary certificates (SPC)
Invest Gwangju 1st ⁵	-	-	Korea	November	Liquidation of Beneficiary certificates (SPC)
Invest Gwangju 2nd ⁵	-	-	Korea	November	Liquidation of Beneficiary certificates (SPC)
Neo Elive ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
The Most Palyong 1st ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
SD Glory ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
Super Moon Blue ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)
ISF 1st ⁵	-	-	Korea	December	Liquidation of Beneficiary certificates (SPC)

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¹ The Group is considered to have control over these entities because its ownership interest with voting rights exceeds 50% and it is highly unlikely that potential voting rights are exercised.

² Although the percentage of ownership is less than 50%, the Group is considered to have control since it is able to exercise the majority of voting rights in these entities' decision-making process based on its ownership interest with voting rights exceeding 50%.

³ Although the percentage of ownership is less than 50%, the Group is considered to have control as the remaining shareholders are mostly minority shareholders with less than 1% of ownership interest, and the Group is able to exercise the majority voting rights in these entities' decision-making process considering the attendance rate of other minority shareholders at general shareholders' meeting.

⁴ Although the percentage of ownership does not exceed 50%, these entities are classified as subsidiary in accordance with KIFRS 1110, taking into account the percentage of ownership and the de facto agent relationship.

⁵ Although the Group does not have ownership interest, these entities are consolidated considering contractual arrangements and exposures to variable returns and others.

(2) Consus Incheon Sewer Private Equity Investment Trust 1 and other twenty-two beneficiary certificates were excluded from the consolidated subsidiaries because the Group has failed to make a substantial decision on activities of the investees even though the Group has a majority of the ownership ratio as of December 31, 2023.

(3) Subsidiaries newly included in the consolidation for the year ended December 31, 2023 are as follows:

Subsidiary	Reason
LENEX MIRAI G.K.	Newly established
Yeonggwang Chilhae Offshore Wind Power Co., Ltd.	Newly established
Q ENERGY (EUROPE) ITALY HOLDINGS S.R.L.	Newly established
RENDE 1 S.R.L.	Newly established
REC date center Co., Ltd.	Newly established
QCELLS FEDERAL SOLUTIONS, LLC	Newly established
Neptune Solar Energy Park LLC	Newly established
NxEF USA, Inc.	Newly established
CPES VALLEE	Newly established
EnFin Residential Solar Finance HoldCo LLC	Newly established
EnFin Residential Solar Finance I LLC	Newly established
Bracero Pecan Storage LLC	Newly established
Fairway Storage LLC	Newly established
Hanwha Futureproof Corp	Newly established
Hanwha Futureproof LLC	Newly established
Hanwha Momentum AB	Newly acquired
Sunergetic Holding B.V	Newly acquired
Sunergetic IP B.V	Newly acquired
Sunergetic Maintenance B.V	Newly acquired
Sunergetic B.V	Newly acquired

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Zelfopwekken.nl B.V	Newly acquired
PT Lippo General Insurance Tbk	Newly acquired
Peopliflife Co., Ltd.	Newly acquired
Hanwha Galleria Co., Ltd.	Newly established through split-off
ARIRANG KOFR Interest Rate	Newly established
Invest Hanho 1st	Newly established
Theta Story 1st	Newly established
K LAND MARK 2nd CO.,LTD	Newly established
Tiger Park Dal 1st	Newly established
HSF 17th	Newly established
Hanwha Q Cells Georgia, Inc	Newly established
Hanwha Solutions Japan G.K.	Newly established
FG Korea Co., Ltd.	Newly established
Vino Galleria Co., Ltd.	Newly established
HANWHA VISION MEXICO	Newly established
Wagon Wheel Energy Storage LLC	Newly established
H&G Chemical Co., Ltd.	Newly established
28909 AVE WILLIAMS PROJECT, LLC	Newly established
84000 TERRA LAGO PKWY PROJECT, LLC	Newly established
TransGrid Energy LLC	Newly established
Viola Storage Project LLC	Newly established
RE100 Solar Factory 1 Co., Ltd.	Newly established
Hanwha Digital Inc.	Newly established
EBC GLOBAL PTE. LTD.	Newly established
JOOB GLOBAL PTE. LTD.	Newly established
Eco E&O	Newly established
Shinan Ui Offshore Windpower Corporation	Newly established
HANWHA AEROSPACE EUROPE	Newly established
Tucannon River Solar LLC	Newly established
Sundown Storage, LLC	Newly acquired
Appaloosa Solar Project LLC	Newly acquired
Atlas Solar, LLC	Newly acquired
Silver Peak Solar LLC	Newly acquired
Atlas Solar II, LLC	Newly acquired
Atlas Solar IV, LLC	Newly acquired
Atlas Solar Retailer, LLC	Newly acquired
Atlas VII, LLC	Newly acquired
Hanwha Global Macro Quant EMP Securities Investment Trust (Mixed - Indirect Type) C-F	Newly acquired
Hanwha Hercules Advanced Country Active Securities Investment Trust (Equity) C-F	Newly acquired
Hyundai Investbook North America Loan Receivables General Asset Investment Trust 32nd	Newly acquired
HANWHA GLOBAL INFRA 5th CO., LTD.	Newly established
HANWHA GLOBAL INFRA 6th CO., LTD.	Newly established
ESNG Korea	Newly established
Muddy Creek Energy Park LLC	Newly established

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Q Energy Real Estate GmbH	Newly established
220 MARK LN SOLAR PROJECT, LLC	Newly established
HQCA CLEAN ENERGY SERVICES, LLC	Newly established
SAPPHIRE ENERGY STORAGE, LLC	Newly established
RUBY ENERGY STORAGE, LLC	Newly established
GEMMA ENERGY STORAGE, LLC	Newly established
DAPHNE ENERGY STORAGE, LLC	Newly established
CRYSTAL ENERGY STORAGE, LLC	Newly established
CORAL ENERGY STORAGE, LLC	Newly established
NEXT STEP N DEVELOPMENT LLC	Newly established
PT.JOOB GLOBAL INDONESIA	Newly established
SHSC BIO INV LLC	Newly established
CASTEDO GREEN, LDA	Newly established
Project Astro Holdco LLC	Newly established
Nerano Energy Storage, LLC	Newly established
Viburnum Energy Storage, LLC	Newly established
Highbush Energy Storage, LLC	Newly established
Qcells Service Solutions, LLC	Newly established
Carver Solar I, LLC	Newly acquired
High GTAA General Asset Investment Trust 1st USD	Newly acquired
Hanwha ARIRANG US Treasury Bond 30-Year Active ETF	Newly acquired
Invest Gwangju 1st	Newly acquired
Invest Gwangju 2nd	Newly acquired
Neo Elive	Newly acquired
HSF 28th	Newly acquired
HSF 29th	Newly acquired
Isu hanwha 1st	Newly acquired
HANWHA AEROSPACE JAPAN GK	Newly established
Hanwha Robotics Co., Ltd.	Newly established
DP Real Estate Japan G.K.	Newly established
Fabless-Pioneer Holdings, Inc.	Newly established
ATLAS IX LLC	Newly established
ATLAS VIII LLC	Newly established
EnFin Residential Solar Finance II LLC	Newly established
CPES GOBELETS	Newly established
CPES CARRIERE DU LEVANT	Newly established
CPES NOUE LE LOUP	Newly established
CPES DEVANT LES CHAUMES	Newly established
CPES PIECES DES PREVOTS	Newly established
QEE Solarpark Werneuchen GmbH & Co. KG	Newly established
QEE Solarpark Zobersdorf GmbH & Co. KG	Newly established
QEE Solarpark Rusterwerder GmbH & Co. KG	Newly established
Copper Storage LLC	Newly established
Galibier Storage LLC	Newly established
CPES BARRAIL	Newly established
CPES GRANDE LANDE	Newly established

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H Techno Logistics Co., Ltd.	Newly established
ALA Green LDA	Newly established
Hanwha USA Partners I GP LLC	Newly established
CPES CARRON	Newly established
Taurus HoldCo. S.L.	Newly acquired
Casoldep, S.L.U.	Newly acquired
Terrapower Global Energy, S.L.U.	Newly acquired
Portas 523 Asset Management , SL	Newly acquired
ENVIRIA IPP DevCO3 GmbH & Co. KG	Newly acquired
URSA SOLAR, LLC	Newly acquired
POLARIS SOLAR, LLC	Newly acquired
ARCAS SOLAR, LLC	Newly acquired
Moffett Solar II, LLC	Newly acquired
White Pine Grove Solar, LLC	Newly acquired
A123 Corporation	Newly acquired
Neubla UK Ltd	Newly acquired
Neubla Korea Co., Ltd.	Newly acquired
EIGIS Global General Asset Real Estate Investment Trust 503	Newly acquired
EIGIS US General Asset Real Estate Investment Trust 529	Newly acquired
Hanwha ARIRANG Japan Semiconductor Industry Solactive Securities Listing Index Investment Trust (Equity)	Newly acquired
The Most Palyong 1st	Newly acquired
SD Glory	Newly acquired
Super Moon Blue	Newly acquired
ISF 1st	Newly acquired
LB Asia Specialized Investment-Type General Asset Real Estate Investment Trust 15th	Newly acquired
Hanwha Global Infrastructure Specialized Asset Investment-Type General Asset Investment Trust 19 th	Newly acquired
Mmplus Sky Specialized Investment Type Collective Investment Trust No. 6-3	Newly acquired

(4) Subsidiaries excluded from the consolidation for the year ended December 31, 2023 are as follows:

Subsidiary	Reason
Adelite Storage Project LLC	Sold
Ardesia Storage Project LLC	Sold
Camellia Storage Project LLC	Sold
Coneflower Storage Project LLC	Sold
Petunia Storage Project LLC	Sold
Shoshana Storage Project LLC	Sold
Kellam Solar Class B, LLC	Sold
HANWHA INTERNATIONAL (S) PTE LTD	Liquidated
Hanwha SolarOne (Rugao) Co., Ltd	Liquidated
Hanwha Korea Legend Security Investment trust(Stock) C-F	Sold
Hanwha ESG Hero Securities Feeder Fund (Bond) C-w	Sold
INVEST PYEONGTAEK 1ST CO., LTD.	Sold

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JH SUWON 1 Co., Ltd.	Sold
JH SUWON 2 Co., Ltd.	Sold
HWASEONGYUBORA 3RD CO., LTD.	Sold
TS GOLD Co., Ltd.	Sold
CEPE LE LANGROIS	Sold
Fnt Gida Turizm Ic Ve Dis Ticaret Sanayi Ltd. Sti.	Sold
Meva Muhendislik Bilisim Enerji Insaat Iletisim Turizm San.Ve Dis Tic. Ltd. Sti.	Sold
Serimer Optik Medikal Kirtasiye Temizlik Insaat Ithalat Ihracat Sanayi Tic. Ltd. Sti.	Sold
Marel Bilisim Muhendislik Enerji Insaat Iletisim Turizm GidaSan. Ve Dis Tic. Ltd. Sti.	Sold
Toprakkale Altyapi ve Malzeme Hizmetleri A.S.	Sold
Aceka 2 Gunes Enerjisi A.S.	Sold
Aceka 3 Gunes Enerjisi A.S.	Sold
Bilgidar 2 Gunes Enerjisi Limited Sirketi	Sold
Buselik 2 Gunes Enerjisi Limited Sirketi	Sold
Buselik 3 Gunes Enerjisi Limited Sirketi	Sold
Dimetoka 2 Gunes Enerjisi Limited Sirketi	Sold
Dimetoka 3 Gunes Enerjisi Limited Sirketi	Sold
Isfahan 3 Gunes Enerjisi Limited Sirketi	Sold
Onan 2 Gunes Enerji Uretim A.S.	Sold
Onan 3 Gunes Enerji Uretim A.S.	Sold
HANWHA MINING SERVICE USA INC.	Liquidated
Hanwha Defense Systems Corp.	Merged
Hanwha Q CELLS Australia Pty Ltd.	Sold
Great Tangjung Co.,Ltd	Sold
CSE COULOMB	Sold
NxEF USA, Inc.	Liquidated
NXEF CO., LTD.	Liquidated
Q CELLS ASSET MANAGEMENT LIMITED	Liquidated
Gobokjumin Taeyanggwangbaljeon Co., Ltd.	Investments in Associates
Yangju Ecotec Co., Ltd.	Investments in Associates
Samsung VLCC Private Investment Trust No.1	Sold
Meritz Real Estate Private Fund 6	Sold
Meritz Real Estate Private Fund 7	Sold
K LAND MARK 2nd CO.,LTD	Sold
HANWHA GLOBAL INFRA 6th CO., LTD.	Sold
HANWHA GLOBAL INFRA 5th CO., LTD.	Sold
ESNG Korea	Sold
Hanwha Advanced Materials Shanghai Co., Ltd.	Sold
South Cheyenne Solar, LLC	Sold
Haeorum PV Plant Corporation	Sold
Appaloosa Solar Project LLC	Sold
Las Coronadas Hive SL	Sold
Guadajoz Hive SL	Sold
Don Rodrigo Hive SL	Sold

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SILVER RIC ENERGY, S.L.	Sold
REAL ENERGY POWER, S.L.	Sold
GALAXY ENERGY, S.L.	Sold
RIMA ENERGY, S.L.U	Sold
GAVILAN POWER, S.L.U	Sold
GERIFALTE POWER, S.L.U	Sold
HARRIER POWER, S.L.U	Sold
CPES MAS D'EN RAMIS	Sold
CEPE du Souleilla S.A.R.L	Sold
Chaume Solar	Sold
CPES LA BREDE	Sold
CEPE RENOUVELLEMENT HAUT CABARDES	Sold
REC Greece S.A.	Liquidated
Gitzeli Solar Energy Production S.A. Greece	Liquidated
Seosan Techno Valley Co., Ltd.	Liquidated
GK Summit Apollo Eleven	Liquidated
Hanwha Resources (USA) Corporation	Liquidated
Renaissanx LLC	Liquidated
ChungNam-Hanwha Small & Medium Company Growth Fund	Liquidated
HAM Holdings Corporation	Merged
Avenir el Divisadero SpA	Merged
PV Vallenar Uno SpA	Merged
Uno Enerji A.S.	Merged
Moravia Enerji Sanayi ve Ticaret Ltd. Sti.	Merged
Ulu Gunes Enerjisi Anonim Sirketi	Merged
Fior Gunes Enerjisi Anonim Sirketi	Merged
Elcin Enerji Uretim Ltd. Sti.	Merged
Mutlak Enerji Uretim Ltd. Sti.	Merged
Kartal Enerji Uretim Ltd. Sti.	Merged
Alkin Enerji Uretim Ltd. Sti.	Merged
Sema Enerji Uretim Ltd. Sti.	Merged
Hiprom Enerji Yatirimlari A.S.	Merged
Aslan Gunes Enerjisi A.S.	Merged
JOOB GLOBAL PTE. LTD.	Investments in Associates
PT.JOOB GLOBAL INDONESIA	(Consolidation → FVOCI)
RE100 Solar Factory 1 Co., Ltd.	Investments in Associates
Hanwha Solar Development Private Investment Trust No.1	Sold
INVEST HYANGDONG 1ST CO., LTD.	Sold
INVEST ALOHA 1ST CO., LTD.	Sold
Hanwha SF 19TH CO., LTD.	Sold
HSF 23TH CO., LTD.	Sold
HSF 26TH CO., LTD.	Sold
HSF 28TH CO., LTD.	Sold
HSF 29TH CO., LTD.	Sold
Isu hanwha 1st	Sold
The Most Yeonmu 1st Co., Ltd.	Sold

Hanwha Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2023 and 2022

Poong Cheon 2nd

Hanwha ARIRANG US Treasury Bond 30-Year Active ETF

Sold

Investments in Associates

(5) Summary of financial information of subsidiaries as of December 31, 2023 and 2022 is as follows:

(in millions of Korean won)

Type Name of entity	2023						
	Current assets	Non-current assets	Assets for financial business	Current liabilities	Non-current liabilities	Liabilities for financial business	Total equity
Hanwha Life Insurance Co., Ltd. ¹	₩ -	₩ -	₩ 118,066,994	₩ -	₩ -	₩ 105,734,545	₩ 12,332,449
Hanwha General Insurance Co., Ltd. ²	-	-	17,991,148	-	-	14,571,663	3,419,485
Hanwha Solutions Co., Ltd.	2,933,680	14,167,020	51,063	4,823,641	4,057,962	-	8,270,160
Hanwha Investment & Securities Co., Ltd. ³	-	-	13,156,508	-	-	11,586,417	1,570,091
Hanwha Aerospace Co., Ltd.	5,995,852	8,163,865	-	9,063,816	1,959,393	-	3,136,508
Hanwha Systems Co., Ltd.	1,843,097	2,963,821	-	1,934,965	370,663	-	2,501,290
Hanwha Q CELLS Co., Ltd. ⁴	332,496	1,332,093	-	217,593	-	-	1,446,996
Hanwha Hotel & Resort Inc.	86,651	2,480,085	-	395,023	1,205,617	-	966,096
Hanwha Savings Bank Co., Ltd.	-	-	1,380,115	-	-	1,195,085	185,030
Hanwha Asset Management Co., Ltd.	-	-	1,643,978	-	-	266,967	1,377,011
Hanwha Global Asset Corporation	150,198	1,104,832	-	20,753	14,416	-	1,219,861
Hanwha Life Financial Service. Co., Ltd.	-	-	1,601,295	-	-	937,232	664,063
Peopliflife Co., Ltd.	-	-	216,714	-	-	148,077	68,637
Hanwha Q CELLS Malaysia Sdn. Bhd.	303,914	319,713	-	191,508	210,976	-	221,143
Hanwha Q CELLS GmbH	387,574	319,260	-	371,220	215,915	-	119,699
Hanwha Life Insurance Company Limited. (Vietnam)	-	-	984,318	-	-	634,155	350,163
Hanwha Q CELLS Investment Co., Ltd.	1,289	679,195	-	16,569	-	-	663,915
Hanwha Chemical (Ningbo) Co., Ltd.	243,512	150,015	-	51,851	-	-	341,676
Hanwha Vision Co., Ltd.	403,719	273,764	-	210,839	68,175	-	398,469
HANWHA CONNECT CO., LTD.	33,874	667,320	-	83,451	273,069	-	344,674
Hanwha Galleria Co.,	327,043	1,934,302	-	482,036	526,912	-	1,252,397

Hanwha Corporation and its subsidiaries

Notes to the consolidated financial statements

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Ltd.							
Hanwha Galleria Timeworld Co., Ltd.	41,490	314,376	-	107,702	35,432	-	212,732
Hanwha Q CELLS Americas Holdings. Corp. ⁵	3,595,109	2,049,200	-	2,687,711	1,538,724	-	1,417,874
Hanwha Holdings(USA), Inc. ⁶	182,246	133,428	-	101,635	29,401	-	184,638
Hanwha Japan CO., LTD.	386,042	117,071	-	316,336	71,774	-	115,003
Q.ENEST Holdings Co., Ltd.	85,669	10,527	-	9,939	14	-	86,243
Q.ENEST Power G.K.	24,344	85,838	-	112,624	-	-	(2,442)
Hanwha Precision Machinery Co., Ltd.	272,335	151,159	-	310,051	67,509	-	45,934
Seoulyeokbukbuyeokseg won Development Co.	690,440	1,330	-	605,110	409	-	86,251
Hanwha Futureproof Corp ⁷	232,737	1,327,143	-	788,209	26,699	-	744,972
Hanwha Aerospace USA ⁸	159,660	124,761	-	124,110	37,455	-	122,856
HANWHA AERO ENGINES.,LTD	176,441	144,140	-	186,364	74,852	-	59,365
HANWHA VISION AMERICA, INC.	276,984	44,740	-	236,502	-	-	85,222
Carrot General Insurance	-	-	393,851	-	-	170,306	223,545
PT. Hanwha Life Insurance Indonesia	-	-	172,953	-	-	22,063	150,890
HANWHA SOLUTIONS USA HOLDINGS CORPORATION ⁹	2,526	199,369	-	739	-	-	201,156
Hanwha Advanced Materials Europe, s.r.o.	46,621	38,516	-	14,663	-	-	70,474
HQC PORTUGAL HOLDINGS, LDA	53,656	70,728	-	8,575	64,979	-	50,830
HCND Co., Ltd.	154,713	135	-	129,339	25,054	-	455
ASANBAEBANG DEVELOPMENT CO., LTD.	180,414	37,118	-	133,920	90,505	-	(6,893)
Hanwha America Development Inc. ¹⁰	233,209	212,294	-	205,142	25,683	-	214,678
Hanwha Techwin Security Vietnam	92,019	33,985	-	53,628	12,896	-	59,480
Hanwha Europe GmbH ¹¹	91,759	19,089	-	69,521	2,788	-	38,539
Pinetree Securities Corporation	-	-	135,519	-	-	55,747	79,772
H Properties TMK	149,800	(12,737)	-	545	37,419	-	99,099
Jeju Ocean Science Museum Corporation	19,123	77,008	-	12,593	47,561	-	35,977
HANWHA CITY	177,893	5,011	-	1,098	21,716	-	160,090

Hanwha Corporation and its subsidiaries

Notes to the consolidated financial statements

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DEVELOPMENT CO.,LTD							
H&G Chemical Co., Ltd.	41,010	198,824	-	983	2,009	-	236,842
Hanwha Compound Corporation	60,596	65,402	-	18,038	10,114	-	97,846
Hanwha Chemical Overseas Holdings, Co., Ltd.	20,199	67,307	-	2,259	-	-	85,247
Hanwha Dream Fund 1	-	-	84,933	-	-	692	84,241
PT. Hanwha Mining Services Indonesia	52,120	51,430	-	78,375	951	-	24,224
PT Lippo General Insurance Tbk	-	-	203,414	-	-	126,970	76,444
DP Real Estate America LLC	13,244	203,830	-	2,062	-	-	215,012
HANWHA DEFENSE AUSTRALIA PTY LTD	135,602	136,523	-	298,334	18,030	-	(44,239)
HANWHA SYSTEMS UK LTD	2,370	156,420	-	24	-	-	158,766
Hanwha Asset Management (USA) Ltd. ¹²	-	-	282,194	-	-	5,054	277,140
Hanwha Cimarron LLC	34,061	68,626	-	36,789	66,032	-	(134)
Hanwha Systems USA Corporation	23,267	206,840	-	10	-	-	230,097
HANWHA VISION EUROPE LIMITED	79,441	3,362	-	56,910	2,276	-	23,617
Q Energy Solutions SE ¹³	917,660	1,167,733	-	288,293	626,471	-	1,170,629
REC Silicon ASA ¹⁴	336,136	376,723	-	167,250	447,148	-	98,461
HCC HOLDINGS CO., LTD.	60,167	413,579	-	324	2,009	-	471,413
HAM HOLDINGS CORPORATION	77,885	108,975	-	18,549	13,557	-	154,754
HANWHA NEXT CO., LTD.	26,521	188,757	-	3,088	1,782	-	210,408
Hanwha NxMD Corporation ¹⁵	45,654	50,208	-	8,669	8,785	-	78,408
Hanwha Consignment Management Real Estate Investment Company Co., Ltd.	21,868	697,139	-	114,507	250,187	-	354,313
HANWHA ADVANCED MATERIALS CO., LTD.	296,892	744,445	-	83,192	83,664	-	874,481
SATREC INITIATIVE CO., LTD. ¹⁶	163,971	148,313	-	78,194	14,426	-	219,664
WEST OCHANG TECHNO VALLEY CO., LTD.	131,376	473	-	135,027	4,524	-	(7,702)
Anseong Techno Valley Co., Ltd.	107,922	120	-	111,101	93	-	(3,152)

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The Second Yong In Techno Valley Co., Ltd.	97,050	46	-	9,981	85,000	-	2,115
DaejeonYeoksegwon Development PFV Co., Ltd.	124,682	-	-	44,464	-	-	80,218

¹ Financial information of Hanwha Life Insurance Co., Ltd., which includes 66 beneficiary certificates as of December 31, 2023.

² Financial information of Hanwha General Insurance Co., Ltd., which includes 2 beneficiary certificates as of December 31, 2023.

³ Consolidated financial information of Hanwha Investment & Securities Co., Ltd., which includes 80 SPCs and 7 beneficiary certificates as of December 31, 2023.

⁴ Consolidated financial information of Hanwha Q CELLS Co., Ltd., which includes the financial information of 11 subsidiaries.

⁵ Consolidated financial information of Hanwha Q CELLS Americas Holdings. Corp., which includes the financial information of 107 subsidiaries.

⁶ Consolidated financial information of Hanwha Holdings (USA) Inc., which includes the financial information of 8 subsidiaries.

⁷ Consolidated financial information of Hanwha Futureproof Corp which includes the financial information of 10 subsidiaries.

⁸ Consolidated financial information of Hanwha Aerospace USA which includes the financial information of 6 subsidiaries.

⁹ Consolidated financial information of HANWHA SOLUTIONS USA HOLDINGS CORPORATION which includes the financial information of 7 subsidiaries.

¹⁰ Consolidated financial information of Hanwha America Development Inc., which includes the financial information of 4 subsidiaries.

¹¹ Consolidated financial information of Hanwha Europe GmbH, which includes the financial information of 3 subsidiaries.

¹² Consolidated financial information of Hanwha Asset Management (USA) Ltd., which includes the financial information of 1 subsidiaries.

¹³ Consolidated financial information of Q Energy Solutions SE, which includes the financial information of 242 subsidiaries.

¹⁴ Consolidated financial information of REC Silicon ASA, which includes the financial information of 6 subsidiaries.

¹⁵ Consolidated financial information of Hanwha NxMD Corporation, which includes the financial information of 1 subsidiaries.

¹⁶ Consolidated financial information of SATREC INITIATIVE CO., LTD., which includes the financial information of 2 subsidiaries.

Hanwha Corporation and its subsidiaries

Notes to the consolidated financial statements

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(in millions of Korean
won)

Type Name of entity	2022						
	Current assets	Non-current assets	Assets for financial business	Current liabilities	Non-current liabilities	Liabilities for financial business	Total equity
Hanwha Life Insurance Co., Ltd. ¹	₩ -	₩ -	₩ 116,364,800	₩ -	₩ -	₩ 102,889,353	₩ 13,475,447
Hanwha General Insurance Co., Ltd. ²	-	-	17,007,412	-	-	13,765,219	3,242,193
Hanwha Solutions Co., Ltd.	4,356,438	14,850,750	-	4,773,393	4,632,500	-	9,801,295
Hanwha Investment & Securities Co., Ltd. ³	-	-	12,013,180	-	-	10,463,483	1,549,697
Hanwha Aerospace Co., Ltd.	3,514,318	5,192,020	-	4,235,521	1,815,335	-	2,655,482
Hanwha Systems Co., Ltd.	2,208,442	1,998,401	-	1,608,723	299,466	-	2,298,654
Hanwha Q CELLS Co., Ltd. ⁴	558,032	1,573,551	-	526,449	-	-	1,605,134
Hanwha Hotel & Resort Inc.	145,331	2,520,689	-	453,871	1,176,840	-	1,035,309
Hanwha Savings Bank Co., Ltd.	-	-	1,624,027	-	-	1,440,862	183,165
Hanwha Asset Management Co., Ltd.	-	-	1,400,676	-	-	48,004	1,352,672
Hanwha Global Asset Corporation	118,443	785,337	-	1,399	14,714	-	887,667
Hanwha Life Financial Service. Co., Ltd.	-	-	1,162,546	-	-	661,243	501,303
Hanwha Q CELLS Malaysia Sdn. Bhd.	454,796	411,852	-	210,369	361,354	-	294,925
Hanwha Q CELLS GmbH	572,022	234,927	-	491,109	108,203	-	207,637
Hanwha Life Insurance Company Limited. (Vietnam)	-	-	829,344	-	-	434,503	394,841
Hanwha Q CELLS Investment Co., Ltd.	79,367	674,273	-	100,003	-	-	653,637
Hanwha Chemical (Ningbo) Co., Ltd.	225,621	173,971	-	32,584	-	-	367,008
Hanwha Vision Co., Ltd.	377,140	227,218	-	212,430	91,427	-	300,501
HANWHA CONNECT CO., LTD.	30,420	445,543	-	97,892	233,645	-	144,426
Hanwha Galleria Timeworld Co., Ltd.	49,575	329,896	-	113,027	40,552	-	225,892
Hanwha Q CELLS Americas Holdings. Corp. ⁵	2,556,515	540,534	-	1,933,540	331,981	-	831,528
Hanwha Holdings(USA), Inc. ⁶	184,904	145,682	-	136,247	11,307	-	183,032
Hanwha Q CELLS Japan	378,984	111,636	-	269,478	51,553	-	169,589

Hanwha Corporation and its subsidiaries

Notes to the consolidated financial statements

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Co., Ltd.							
Hanwha Precision Machinery Co., Ltd.	279,479	80,588	-	196,004	53,031	-	111,032
Seoulyeokbukbuyeoksegyon Development Co.	461,601	792	-	374,287	472	-	87,634
Hanwha Aerospace USA ⁷	155,842	105,988	-	33,961	131,551	-	96,318
HANWHA AERO ENGINES.,LTD	124,752	149,543	-	179,092	75,046	-	20,157
HANWHA TECHWIN AMERICA, INC.	280,349	25,336	-	228,762	-	-	76,923
Carrot General Insurance	-	-	310,057	-	-	143,067	166,990
PT. Hanwha Life Insurance Indonesia	-	-	166,952	-	-	14,460	152,492
HANWHA SOLUTIONS USA HOLDINGS CORPORATION ⁸	4,684	175,124	-	128	-	-	179,680
Hanwha Advanced Materials Europe, s.r.o.	73,252	90,230	-	50,187	-	-	113,295
HQC PORTUGAL HOLDINGS, LDA	11,121	144,040	-	3,297	155,622	-	(3,758)
ASANBAEBANG DEVELOPMENT CO., LTD.	202,123	5,552	-	121,305	91,295	-	(4,925)
Hanwha America Development Inc. ⁹	210,137	195,097	-	203,995	41,495	-	159,744
Hanwha Techwin Security Vietnam	104,648	31,295	-	77,928	12,684	-	45,331
Hanwha Europe GmbH ¹⁰	112,377	17,327	-	96,620	958	-	32,126
Pinetree Securities Corporation	-	-	136,394	-	-	57,047	79,347
H Properties TMK	175,838	3	-	41,036	86,644	-	48,161
Jeju Ocean Science Museum Corporation	17,267	81,182	-	9,267	60,789	-	28,393
HANWHA CITY DEVELOPMENT CO.,LTD	4,329	178,293	-	1,093	21,716	-	159,813
Hanwha Compound Corporation	51,945	54,204	-	26,091	8,540	-	71,518
Hanwha Chemical Overseas Holdings, Co., Ltd.	32,689	67,307	-	8,570	-	-	91,426
Hanwha Dream Fund 1	-	-	83,434	-	-	425	83,009
PT. Hanwha Mining Services Indonesia	74,582	46,433	-	102,019	776	-	18,220
Q Energy Mediterranee ¹¹	127,995	91,493	-	136,403	10,693	-	72,392
DP Real Estate America LLC	15,973	199,157	-	2,807	-	-	212,323
HANWHA DEFENSE AUSTRALIA PTY LTD	124,707	36,669	-	184,533	16,564	-	(39,721)

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HANWHA SYSTEMS UK LTD	3,764	268,614	-	770	-	-	271,608
Hanwha Asset Management (USA) Ltd.	-	-	270,967	-	-	4,566	266,401
Hanwha Cimarron LLC	49,160	66,341	-	22,572	63,440	-	29,489
Hanwha Systems USA Corporation	58,672	106,385	-	4	-	-	165,053
Hanwha Techwin Europe Limited	78,606	2,665	-	48,096	2,100	-	31,075
Q Energy Europe GmbH ¹²	332,846	108,296	-	28,859	268,399	-	143,884
Q Energy Solutions SE	52,704	1,376,372	-	6,433	242,437	-	1,180,206
REC Silicon ASA ¹³	212,314	193,042	-	203,174	125,652	-	76,530
HCC HOLDINGS CO., LTD.	58,686	413,579	-	5,361	-	-	466,904
HAM HOLDINGS CORPORATION	52,872	371,347	-	76	11,157	-	412,986
WOS CO., LTD.	108,686	13,373	-	2,011	107	-	119,941
HANWHA NEXT CO., LTD.	27,973	193,815	-	4,839	8,992	-	207,957
Hanwha NxMD Corporation	98,970	30,916	-	12,469	9,596	-	107,821
Hanwha Consignment Management Real Estate Investment Company Co., Ltd.	30,429	695,630	-	233,978	253,322	-	238,759
HANWHA ADVANCED MATERIALS CO., LTD.	343,433	331,439	-	101,427	75,915	-	497,530
SATREC INITIATIVE CO., LTD. ¹⁴	194,271	70,029	-	56,828	81,454	-	126,018
WEST OCHANG TECHNO VALLEY CO., LTD.	91,094	718	-	79,741	17,000	-	(4,929)
Anseong Techno Valley Co., Ltd.	87,603	431	-	52,162	40,000	-	(4,128)
DaejeonYeoksegwon Development PFV Co., Ltd.	98,699	-	-	17,624	-	-	81,075
Hanwha Munitions Co., Ltd.	1,589,749	1,200,789	-	1,730,937	368,224	-	691,377

¹ Financial information of Hanwha Life Insurance Co., Ltd., which includes 63 beneficiary certificates as of December 31, 2022.

² Financial information of Hanwha General Insurance Co., Ltd., which includes 2 beneficiary certificates as of December 31, 2022.

³ Consolidated financial information of Hanwha Investment & Securities Co., Ltd., which includes 82 SPCs and 4 beneficiary certificates as of December 31, 2022.

⁴ Consolidated financial information of Hanwha Q CELLS Co., Ltd., which includes the financial information of 12 subsidiaries.

Hanwha Corporation and its subsidiaries

Notes to the consolidated financial statements

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⁵ Consolidated financial information of Hanwha Q CELLS Americas Holdings. Corp., which includes the financial information of 79 subsidiaries.

⁶ Consolidated financial information of Hanwha Holdings (USA) Inc., which includes the financial information of 9 subsidiaries.

⁷ Consolidated financial information of Hanwha Aerospace USA, which includes the financial information of 6 subsidiaries.

⁸ Consolidated financial information of HANWHA SOLUTIONS USA HOLDINGS CORPORATION, which includes the financial information of 6 subsidiaries.

⁹ Consolidated financial information of Hanwha America Development Inc., which includes the financial information of 4 subsidiaries.

¹⁰ Consolidated financial information of Hanwha Europe GmbH, which includes the financial information of 2 subsidiaries.

¹¹ Consolidated financial information of Q Energy Mediterranee, which includes the financial information of 143 subsidiaries.

¹² Consolidated financial information of Q Energy Europe GmbH, which includes the financial information of 92 subsidiaries.

¹³ Consolidated financial information of REC Silicon ASA, which includes the financial information of 8 subsidiaries.

¹⁴ Consolidated financial information of SATREC INITIATIVE CO., LTD., which includes the financial information of 2 subsidiaries.

(6) Summary of business performance of subsidiaries for each of the two years in the period ended December 31, 2023 is as follows:

		2023					
		Type		Name of entity			
		Sales	Operating profit (loss)	Profit (loss) for the year	Other comprehensive income (loss)	Total comprehensive income (loss)	
Hanwha Life Insurance Co., Ltd. ¹	₩	14,111,794	₩ 672,367	₩ 534,124	₩ 7,104,672	₩ 7,638,796	
Hanwha General Insurance Co., Ltd. ²		5,547,218	390,753	290,633	1,959,541	2,250,174	
Hanwha Solutions Co., Ltd.		7,305,296	22,686	(312,097)	(371,242)	(683,339)	
Hanwha Investment & Securities Co., Ltd. ³		1,958,370	40,007	4,254	17,009	21,263	
Hanwha Aerospace Co., Ltd.		4,978,993	515,601	643,271	36,075	679,346	
Hanwha Systems Co., Ltd.		2,450,585	130,958	297,347	(55,181)	242,166	
Hanwha Q CELLS Co., Ltd. ⁴		531,630	25,763	(155,896)	(2,242)	(158,138)	
Hanwha Hotel & Resort Inc.		522,162	7,688	(43,128)	(22,690)	(65,818)	
Hanwha Savings Bank Co., Ltd.		119,830	(596)	1,585	280	1,865	
Hanwha Asset Management Co., Ltd.		150,151	33,798	28,289	(3,950)	24,339	
Hanwha Global Asset		-	(998)	5,405	9,038	14,443	

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Corporation					
Hanwha Life Financial Service. Co., Ltd.	1,563,771	78,064	73,288	(10,156)	63,132
Peoplelife Co., Ltd.	315,673	9,479	4,417	(32)	4,385
Hanwha Q CELLS Malaysia Sdn. Bhd.	451,784	26,090	(50,782)	(4,996)	(55,778)
Hanwha Q CELLS GmbH	796,852	(105,152)	(98,551)	10,614	(87,937)
Hanwha Life Insurance Company Limited. (Vietnam)	150,199	58,789	47,076	(8,532)	38,544
Hanwha Q CELLS Investment Co., Ltd.	-	(133)	(1,134)	11,413	10,279
Hanwha Chemical (Ningbo) Co., Ltd.	379,272	(5,938)	1,223	(1,181)	42
Hanwha Vision Co., Ltd.	730,089	87,996	89,651	8,881	98,532
HANWHA CONNECT CO., LTD.	191,727	35,181	202,302	(86)	202,216
Hanwha Galleria Co., Ltd.	351,948	8,677	(29,718)	412,342	382,624
Hanwha Galleria Timeworld Co., Ltd.	128,201	3,623	(297)	(12,864)	(13,161)
Hanwha Q CELLS Americas Holdings. Corp. ⁵	4,445,177	312,438	272,661	2,928	275,589
Hanwha Holdings(USA), Inc. ⁶	303,883	(876)	(592)	3,219	2,627
Hanwha Japan CO., LTD.	473,262	7,044	4,326	(4,423)	(97)
Q.ENEST Holdings Co., Ltd.	34	(4,103)	(3,304)	(5,527)	(8,831)
Q.ENEST Power G.K.	1,546	(1,188)	(2,444)	52	(2,392)
Hanwha Precision Machinery Co., Ltd.	390,371	(44,330)	(30,246)	(2,368)	(32,614)
Seoulyeokbukbyeoksegw on Development Co.	-	(1,803)	(1,383)	-	(1,383)
Hanwha Futureproof Corp ⁷	393	(10,442)	(7,880)	(11,962)	(19,842)
Hanwha Aerospace USA ⁸	251,991	16,195	25,382	1,156	26,538
HANWHA AERO ENGINES.,LTD	177,531	23,341	698	(863)	(165)
HANWHA VISION AMERICA, INC.	628,460	11,410	7,046	1,251	8,297
Carrot General Insurance	520,285	(74,633)	(74,609)	(1,170)	(75,779)
PT. Hanwha Life Insurance Indonesia	16,409	(7,091)	(6,916)	5,264	(1,652)
HANWHA SOLUTIONS USA HOLDINGS CORPORATION ⁹	126	(3,628)	(12,636)	3,033	(9,603)
Hanwha Advanced Materials Europe, s.r.o.	103,247	5,828	(47,594)	4,773	(42,821)
HQC PORTUGAL HOLDINGS, LDA	-	(2,877)	(1,088)	904	(184)
HCND Co., Ltd.	-	(545)	(443)	-	(443)

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ASANBAEBANG					
DEVELOPMENT CO., LTD.	46,388	(2,101)	(1,968)	-	(1,968)
Hanwha America Development Inc. ¹⁰	465,008	13,481	8,512	3,126	11,638
Hanwha Techwin Security Vietnam	254,400	21,431	15,008	(860)	14,148
Hanwha Europe GmbH ¹¹	349,631	6,746	4,620	1,849	6,469
Pinetree Securities Corporation	13,509	1,257	1,198	(774)	424
H Properties TMK	144,427	54,045	54,094	(3,157)	50,937
Jeju Ocean Science Museum Corporation	31,676	12,480	7,585	-	7,585
HANWHA CITY DEVELOPMENT CO.,LTD	-	(2,537)	277	-	277
H&G Chemical Co., Ltd.	-	(2,250)	841	-	841
Hanwha Compound Corporation	190,400	4,431	4,099	(737)	3,362
Hanwha Chemical Overseas Holdings, Co., Ltd.	-	(14)	47,574	-	47,574
Hanwha Dream Fund 1	936	(7,269)	(7,132)	-	(7,132)
PT. Hanwha Mining Services Indonesia	72,721	9,286	5,536	468	6,004
PT Lippo General Insurance Tbk	234,477	11,292	15,567	(2,687)	12,880
DP Real Estate America LLC	3,174	(1,433)	(1,027)	3,716	2,689
HANWHA DEFENSE AUSTRALIA PTY LTD	74,528	(16,760)	(5,910)	(986)	(6,896)
HANWHA SYSTEMS UK LTD	-	(709)	(862)	61,094	60,232
Hanwha Asset Management (USA) Ltd. ¹²	17,874	7,687	5,997	4,742	10,739
Hanwha Cimarron LLC	20,539	(25,654)	(30,529)	905	(29,624)
Hanwha Systems USA Corporation	-	(2,006)	62,971	2,072	65,043
HANWHA VISION EUROPE LIMITED	147,228	4,146	3,319	2,670	5,989
Q Energy Solutions SE ¹³	526,142	(9,553)	(33,425)	63,285	29,860
REC Silicon ASA ¹⁴	184,353	(144,688)	39,848	(17,917)	21,931
HCC HOLDINGS CO., LTD.	-	(51)	28,175	-	28,175
HAM HOLDINGS CORPORATION	64,595	(1,725)	237	738	975
HANWHA NEXT CO., LTD.	3,139	(2,684)	9,116	(6,514)	2,602
Hanwha NxMD Corporation ¹⁵	32,646	(35,887)	(32,784)	1,709	(31,075)
Hanwha Consignment Management Real Estate Investment Company Co., Ltd.	46,206	34,575	11,825	-	11,825

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HANWHA ADVANCED MATERIALS CO., LTD.	525,844	42,939	39,895	(46)	39,849
SATREC INITIATIVE CO., LTD. ¹⁶	125,438	(4,145)	39,610	516	40,126
WEST OCHANG TECHNO VALLEY CO., LTD.	-	(2,776)	(2,773)	-	(2,773)
Anseong Techno Valley Co., Ltd.	25,318	1,656	975	-	975
The Second Yong In Techno Valley Co., Ltd.	-	(900)	(2,045)	-	(2,045)
DaejeonYeoksegwon Development PFV Co., Ltd.	-	(792)	(857)	-	(857)

¹ Financial information of Hanwha Life Insurance Co., Ltd., which includes 66 beneficiary certificates as of December 31, 2023.

² Financial information of Hanwha General Insurance Co., Ltd., which includes 2 beneficiary certificates as of December 31, 2023.

³ Consolidated financial information of Hanwha Investment & Securities Co., Ltd., which includes 80 SPCs and 7 beneficiary certificates as of December 31, 2023.

⁴ Consolidated financial information of Hanwha Q CELLS Co., Ltd., which includes the financial information of 11 subsidiaries.

⁵ Consolidated financial information of Hanwha Q CELLS Americas Holdings. Corp., which includes the financial information of 107 subsidiaries.

⁶ Consolidated financial information of Hanwha Holdings (USA) Inc., which includes the financial information of 8 subsidiaries.

⁷ Consolidated financial information of Hanwha Futureproof Corp which includes the financial information of 10 subsidiaries.

⁸ Consolidated financial information of Hanwha Aerospace USA which includes the financial information of 6 subsidiaries.

⁹ Consolidated financial information of HANWHA SOLUTIONS USA HOLDINGS CORPORATION which includes the financial information of 7 subsidiaries.

¹⁰ Consolidated financial information of Hanwha America Development Inc., which includes the financial information of 4 subsidiaries.

¹¹ Consolidated financial information of Hanwha Europe GmbH, which includes the financial information of 3 subsidiaries.

¹² Consolidated financial information of Hanwha Asset Management (USA) Ltd., which includes the financial information of a subsidiary.

¹³ Consolidated financial information of Q Energy Solutions SE, which includes the financial information of 242 subsidiaries.

¹⁴ Consolidated financial information of REC Silicon ASA, which includes the financial information of 6 subsidiaries.

¹⁵ Consolidated financial information of Hanwha NxMD Corporation, which includes the financial information of a subsidiary.

¹⁶ Consolidated financial information of SATREC INITIATIVE CO., LTD., which includes the financial information of 2 subsidiaries.

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Type Name of entity	2022					
	Sales	Operating profit (loss)	Profit (loss) for the year	Other comprehensive income (loss)	Total comprehensive income (loss)	
Hanwha Life Insurance Co., Ltd. ¹	₩ 12,188,877	₩ 332,934	₩ 492,354	₩ (4,958,885)	₩ (4,466,531)	
Hanwha General Insurance Co., Ltd. ²	5,560,021	357,314	288,328	-	288,328	
Hanwha Solutions Co., Ltd.	9,686,399	915,779	1,031,882	1,035,526	2,067,408	
Hanwha Investment & Securities Co., Ltd. ³	2,102,960	48,411	(46,128)	(227,385)	(273,513)	
Hanwha Aerospace Co., Ltd.	1,955,523	146,879	308,892	217,668	526,560	
Hanwha Systems Co., Ltd.	2,187,406	93,680	80,170	(21,648)	58,522	
Hanwha Q CELLS Co., Ltd. ⁴	2,794,851	52,532	47,678	(43,575)	4,103	
Hanwha Hotel & Resort Inc.	548,446	(16,918)	37,374	515,597	552,971	
Hanwha Savings Bank Co., Ltd.	90,456	20,798	17,117	(1,963)	15,154	
Hanwha Asset Management Co., Ltd.	143,926	36,964	2,708	4,235	6,943	
Hanwha Global Asset Corporation	-	(1,382)	(3,555)	77	(3,478)	
Hanwha Life Financial Service. Co.,Ltd.	896,067	(75,604)	(59,644)	4,652	(54,992)	
Hanwha Q CELLS Malaysia Sdn. Bhd.	950,529	74,437	50,974	(1,247)	49,727	
Hanwha Q CELLS Gmbh	1,269,157	14,480	19,740	3,443	23,183	
Hanwha Life Insurance Company Limited. (Vietnam)	151,360	38,875	31,093	-	31,093	
Hanwha Q CELLS Investment Co., Ltd.	-	547	1,348	60,277	61,625	
Hanwha Chemical (Ningbo) Co., Ltd.	502,116	34,479	34,616	(14,581)	20,035	
Hanwha Vision Co., Ltd.	825,560	113,630	89,199	17,164	106,363	
HANWHA CONNECT CO., LTD.	152,273	29,901	12,161	171	12,332	
Hanwha Galleria Timeworld Co., Ltd.	137,105	14,269	6,580	34,416	40,996	
Hanwha Q CELLS Americas Holdings. Corp. ⁵	2,308,559	163,727	107,043	20,601	127,644	
Hanwha Holdings(USA), Inc. ⁶	371,683	(5,752)	(10,648)	21,488	10,840	
Hanwha Q CELLS Japan Co., Ltd.	570,798	4,473	3,733	(11,649)	(7,916)	
Hanwha Precision Machinery Co., Ltd.	517,594	28,209	21,500	2,984	24,484	
Seoulyeokbukbuyeoksegw	-	(1,637)	(1,273)	-	(1,273)	

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on Development Co.					
Hanwha Aerospace USA ⁷	225,502	15,853	15,956	4,006	19,962
HANWHA AERO ENGINES.,LTD	115,002	17,525	2,563	459	3,022
HANWHA TECHWIN AMERICA, INC.	591,673	27,014	18,662	3,438	22,100
Carrot General Insurance	403,684	(83,113)	(83,092)	(42)	(83,134)
PT. Hanwha Life Insurance Indonesia	16,754	(1,564)	(1,606)	-	(1,606)
HANWHA SOLUTIONS USA HOLDINGS CORPORATION ⁸	-	(2,608)	(24,179)	11,230	(12,949)
Hanwha Advanced Materials Europe, s.r.o.	98,394	4,309	3,739	3,707	7,446
HQC PORTUGAL HOLDINGS, LDA	-	(64)	(1,394)	(17)	(1,411)
ASANBAEBANG DEVELOPMENT CO., LTD.	33,649	(7,252)	(7,588)	-	(7,588)
Hanwha America Development Inc. ⁹	473,743	27,566	14,901	4,319	19,220
Hanwha Techwin Security Vietnam	351,959	33,384	24,097	23	24,120
Hanwha Europe GmbH ¹⁰	364,523	6,467	4,809	158	4,967
Pinetree Securities Corporation	11,992	745	678	2,327	3,005
H Properties TMK	-	(1,838)	(1,850)	(3,979)	(5,829)
Jeju Ocean Science Museum Corporation	30,244	12,542	7,077	-	7,077
HANWHA CITY DEVELOPMENT CO.,LTD	-	(2,511)	5,407	64,878	70,285
Hanwha Compound Corporation	204,458	3,624	2,672	16,217	18,889
Hanwha Chemical Overseas Holdings, Co., Ltd.	-	(92)	36,637	-	36,637
Hanwha Dream Fund 1	1,902	120	120	-	120
PT. Hanwha Mining Services Indonesia	77,571	4,691	(3,906)	(323)	(4,229)
Q Energy Mediterranee ¹¹	88,642	(12,683)	(10,431)	567	(9,864)
DP Real Estate America LLC	150	(2,288)	(2,164)	(5,237)	(7,401)
HANWHA DEFENSE AUSTRALIA PTY LTD	59,445	(12,053)	(585)	46	(539)
HANWHA SYSTEMS UK LTD	-	(625)	2,529	(93,705)	(91,176)
Hanwha Asset Management (USA) Ltd.	8,834	2,669	2,521	(3,870)	(1,349)
Hanwha Cimarron LLC	8,865	(16,586)	(17,918)	3,430	(14,488)
Hanwha Systems USA Corporation	-	(1,193)	(67,606)	13,206	(54,400)

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Hanwha Techwin Europe Limited	119,449	1,245	642	(1,473)	(831)
Q Energy Europe GmbH ¹²	35,105	1,026	(3,628)	(1,129)	(4,757)
Q Energy Solutions SE	11,891	(1,312)	(3,730)	(4,396)	(8,126)
REC Silicon ASA ¹³	146,213	(69,829)	(100,955)	17,898	(83,057)
HCC HOLDINGS CO., LTD.	-	(702)	53,758	-	53,758
HAM HOLDINGS CORPORATION	-	(44)	(6,366)	-	(6,366)
WOS CO., LTD.	345	(7,101)	(4,711)	-	(4,711)
HANWHA NEXT CO., LTD.	9,873	(3,444)	(2,990)	71,247	68,257
Hanwha NxMD Corporation	20,405	(23,247)	(6,908)	(211)	(7,119)
Hanwha Consignment Management Real Estate Investment Company Co., Ltd.	-	-	-	-	-
HANWHA ADVANCED MATERIALS CO., LTD.	48,361	(4,124)	(5,753)	55,467	49,714
SATREC INITIATIVE CO., LTD. ¹⁴	92,192	(4,172)	2,887	(297)	2,590
WEST OCHANG TECHNO VALLEY CO., LTD.	-	(2,320)	(2,014)	-	(2,014)
Anseong Techno Valley Co., Ltd.	-	(1,198)	(1,192)	-	(1,192)
DaejeonYeoksegwon Development PFV Co., Ltd.	-	(834)	(829)	-	(829)
Hanwha Munitions Co., Ltd.	412,644	27,730	15,557	210,814	226,371

¹ Financial information of Hanwha Life Insurance Co., Ltd., which includes 63 beneficiary certificates as of December 31, 2022.

² Financial information of Hanwha General Insurance Co., Ltd., which includes 2 beneficiary certificates as of December 31, 2022.

³ Consolidated financial information of Hanwha Investment & Securities Co., Ltd., which includes 82 SPCs and 4 beneficiary certificates as of December 31, 2022.

⁴ Consolidated financial information of Hanwha Q CELLS Co., Ltd., which includes the financial information of 12 subsidiaries.

⁵ Consolidated financial information of Hanwha Q CELLS Americas Holdings. Corp., which includes the financial information of 79 subsidiaries.

⁶ Consolidated financial information of Hanwha Holdings (USA) Inc., which includes the financial information of 9 subsidiaries.

⁷ Consolidated financial information of Hanwha Aerospace USA, which includes the financial information of 6 subsidiaries.

⁸ Consolidated financial information of HANWHA SOLUTIONS USA HOLDINGS CORPORATION, which includes the financial information of 6 subsidiaries.

⁹ Consolidated financial information of Hanwha America Development Inc., which includes the financial information of 4 subsidiaries.

¹⁰ Consolidated financial information of Hanwha Europe GmbH, which includes the financial information of 2 subsidiaries.

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¹¹ Consolidated financial information of Q Energy Mediterranee, which includes the financial information of 143 subsidiaries.

¹² Consolidated financial information of Q Energy Europe GmbH, which includes the financial information of 92 subsidiaries.

¹³ Consolidated financial information of REC Silicon ASA, which includes the financial information of 8 subsidiaries.

¹⁴ Consolidated financial information of SATREC INITIATIVE CO., LTD., which includes the financial information of 2 subsidiaries.

5. Investments in Associates and Joint Venture

(1) Details of major investments in associates and joint venture as of December 31, 2023 and 2022 are as follows:

Name of entity	Percentage of ownership (%)		Location	Closing month	Business
	2023	2022			
Joint venture					
Yeochun NCC Co., Ltd.	50.00	50.00	Korea	December	Manufacture of basic compound
Associate					
Hanwha Impact Co., Ltd.	47.93	47.93	Korea	December	Manufacture of petrochemicals
Hanwha Ocean Co., Ltd.	34.72	-	Korea	December	Manufacture of ship

(2) Changes in investments in associates and joint venture for each of the two years in the period ended December 31, 2023 are as follows:

(in millions of Korean won)

Korean won)		2023												
		Beginning	Acquisitions	Disposals	Share of profit or loss of associates and joint venture	Other comprehensive income	Others ¹	Ending						
Yeochun NCC Co., Ltd.	₩	524,624	₩	-	₩	-	₩	(124,285)	₩	100,762	₩	(101,525)	₩	399,576
Hanwha Impact Co., Ltd.		2,213,724		-		-		107,803		(37,954)		11,944		2,295,517
Hanwha Ocean Co., Ltd.		-		2,735,977		-		48,434		(54,329)		(8,572)		2,721,510
Others		1,763,896		321,171		(246,516)		17,524		10,569		(53,397)		1,813,247
Total	₩	4,502,244	₩	3,057,148	₩	(246,516)	₩	49,476	₩	19,048	₩	(151,550)	₩	7,229,850

¹ Others include changes in scope of consolidation and receipts of dividends from associates.

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(in millions of
Korean won)

		2022						
		Beginning	Acquisitions	Disposals	Share of profit or loss of associates and joint venture	Other comprehensive income	Others ¹	Ending
Yechun NCC Co., Ltd.	₩	572,792	₩ -	₩ -	₩ (153,943)	₩ 105,775	₩ -	₩ 524,624
Hanwha Impact Co., Ltd.		1,961,813	-	-	48,361	97,180	106,370	2,213,724
Others		1,585,074	452,215	(31,067)	29,562	(17,133)	(254,755)	1,763,896
Total	₩	4,119,679	₩ 452,215	₩ (31,067)	₩ (76,020)	₩ 185,822	₩ (148,385)	₩ 4,502,244

¹ Others include changes in scope of consolidation and receipts of dividends from associates.

(3) Summary of financial information of major associates and joint venture as of December 31, 2023 and 2022 is as follows:

(in millions of Korean won)

		2023			
		Current assets	Non-current assets	Current liabilities	Non-current liabilities
Yechun NCC Co., Ltd.	₩	1,293,264	₩ 1,997,710	₩ 1,551,669	₩ 866,178
Hanwha Impact Co., Ltd.		1,517,888	5,234,070	1,490,914	516,622
Hanwha Ocean Co., Ltd. ¹		9,217,524	4,727,249	7,459,444	2,173,171

¹ Acquired for the year ended December 31, 2023, and the deemed acquisition date is April 30, 2023.

(in millions of Korean won)

		2022			
		Current assets	Non-current assets	Current liabilities	Non-current liabilities
Yechun NCC Co., Ltd.	₩	1,343,195	₩ 2,002,329	₩ 1,094,966	₩ 1,135,673
Hanwha Impact Co., Ltd.		1,906,919	4,558,077	1,166,693	678,585

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(4) Summary of business performance of major associates and joint venture for each of the two years in the period ended December 31, 2023 is as follows:

(in millions of Korean won)

	2023				
	Revenue	Gain from continuing operations	Other comprehensive income	Total comprehensive income	Receipts of dividends from associates
Yeochoon NCC Co., Ltd.	₩ 5,434,763	₩ (240,231)	₩ 199,998	₩ (40,233)	₩ -
Hanwha Impact Co., Ltd.	2,759,109	234,010	(87,874)	146,136	-
Hanwha Ocean Co., Ltd. ^{1, 2}	5,427,337	14,731	(32,210)	(17,479)	-

¹ Acquired for the year ended December 31, 2023, and the deemed acquisition date is April 30, 2023.

² The Group acquired a 34.72% stake on May 23, 2023 and November 16, 2023 through participation in the capital increase through third-party allocation and classified it as an associate.

(in millions of Korean won)

	2022				
	Revenue	Gain from continuing operations	Other comprehensive income	Total comprehensive income	Receipts of dividends from associates
Yeochoon NCC Co., Ltd.	₩ 6,856,876	₩ (347,724)	₩ 211,549	₩ (136,175)	₩ -
Hanwha Impact Co., Ltd.	2,533,514	112,613	450,705	563,318	-

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(5) Details of adjustments from financial information of major associates and joint venture to the book amount of investments in associates and joint venture as of December 31, 2023 and 2022 are as follows:

(in millions of Korean won)

	2023					
	Yeochun NCC Co., Ltd.		Hanwha Impact Co., Ltd. ¹		Hanwha Ocean Co., Ltd. ¹	
Net assets (A) ²	₩	873,128	₩	4,743,965	₩	4,362,840
Percentage of ownership (B)		50.00		47.93		34.72
Interests in net assets (A×B)		436,564		2,273,871		1,514,643
(+) Goodwill		-		24,775		1,213,522
(-) Intercompany transactions		(36,988)		(3,129)		6
Book amount		399,576		2,295,517		2,728,171

¹ Since this associate prepares its consolidated financial statements, the net assets are the Parent Company's investment presented on the associate's consolidated financial statements.

² Net assets include differences in fair value, and differences arising from re-evaluation of property, plant and equipment and fair value measurement of investment property.

(in millions of Korean won)

	2022			
	Yeochun NCC Co., Ltd.		Hanwha Impact Co., Ltd. ¹	
Net assets (A)	₩	1,114,885	₩	4,618,665
Percentage of ownership (B)		50		47.93
Interests in net assets (A×B)		557,443		2,213,811
(+) Goodwill		-		24,775
(-) Intercompany transactions		(32,819)		(24,862)
Book amount	₩	524,624	₩	2,213,724

¹ Since this associate prepares its consolidated financial statements, the net assets are the Parent Company's investment presented on the associate's consolidated financial statements

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(6) Unrecognized accumulated loss due to discontinued use of equity method for each of the two years in the period ended December 31, 2023 is as follows:

<i>(in millions of Korean won)</i>	2023	2022
The Ulsan Harbour Bridge	₩ 3,474	₩ 2,700
Burdur Enerji A.S.	2,686	3,870
Gulf Advanced Cables Insulation Company	14,881	13,012
Overair, Inc.	43,812	-

Investments in associates are provided as collateral for payables of the Group as of December 31, 2023 (Note 56).

6. Segment Information

(1) The Group's reportable segments and details are as follows:

Segment	Main business
Explosives and production	Manufacturing and selling of explosives
Trading and wholesale retails	Trading and retails
Petrochemical production	Manufacturing and selling of petrochemicals
Construction	Engineering and construction services for building, plant and environment facilities, and others
Leisure and service	Operating athletic facilities, tourism, hotel and catering businesses
Photovoltaic business	Manufacturing and selling of product related to sunlight and photovoltaic power generation
Financial business	Insurance business and management of deposits and instalment savings
Others	Manufacturing and selling of others

(2) A profit or loss by each segment for each of the two years in the period ended December 31, 2023 is as follows:

<i>(in millions of Korean won)</i>	2023				
	Explosives and Production	Trading and Wholesale retails	Petrochemical production	Construction	Leisure and Service
Revenue	₩ 10,189,781	₩ 3,574,473	₩ 6,243,179	₩ 5,326,619	₩ 1,662,590
Operating profit (loss)	781,642	88,083	(87,486)	(2,155)	72,512
Finance income (costs) and others	283,202	(73,588)	(54,598)	(120,050)	(24,236)
Profit (loss) for the year	1,064,844	14,495	(142,084)	(122,205)	48,276

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(in millions of Korean won)

	2023				
	Photovoltaic business	Financial business	Others	Consolidation adjustment	Total
Revenue	₩ 9,559,456	₩ 24,910,044	₩ 1,207,301	₩ (9,538,630)	₩ 53,134,813
Operating profit (loss)	224,082	1,208,951	55,406	70,885	2,411,920
Finance income (costs) and others	(451,822)	(296,512)	281,103	(319,904)	(776,405)
Profit (loss) for the year	(227,740)	912,439	336,509	(249,019)	1,635,515

(in millions of Korean won)

	2022				
	Explosives and Production	Trading and Wholesale retails	Petrochemical production	Construction	Leisure and Service
Revenue	₩ 9,205,613	₩ 3,876,391	₩ 7,016,364	₩ 4,326,233	₩ 1,430,460
Operating profit (loss)	543,279	147,658	486,897	238,569	(33,543)
Finance income (costs) and others	285,668	(48,439)	241,039	(131,195)	(10,172)
Profit (loss) for the year	828,947	99,219	727,936	107,374	(43,715)

(in millions of Korean won)

	2022				
	Photovoltaic business	Financial business	Others	Consolidation adjustment	Total
Revenue	₩ 11,202,244	₩ 21,740,017	₩ 1,182,436	₩ (9,093,027)	₩ 50,886,731
Operating profit (loss)	648,523	662,942	31,172	(355,859)	2,369,638
Finance income (costs) and others	(295,358)	(34,505)	(32,155)	(335,560)	(360,677)
Profit (loss) for the year	353,165	628,437	(983)	(691,419)	2,008,961

(3) Details of the Group's depreciation and amortization for each of the two years in the period ended December 31, 2023 are as follows:

(in millions of Korean won)

	2023	2022
Explosives and production	₩ 395,027	₩ 327,871
Trading and wholesale retails	84,214	29,327
Petrochemical production	476,604	541,803
Construction	594	37,157
Leisure and service	66,128	67,199
Photovoltaic business	194,770	156,204
Financial business	278,268	207,606
Others	61,623	16,731
Consolidation adjustment	(3,595)	(26,794)
Total	₩ 1,553,633	₩ 1,357,104

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(4) Segment assets and liabilities as of December 31, 2023 and 2022 are as follows:

(in millions of Korean won)

	2023			
	Reportable segment asset	Investments in associates	Changes in non-current assets	Reportable segment liability
Explosives and production	₩ 28,786,402	₩ 10,356,832	₩ 5,523,626	₩ 18,760,984
Trading and wholesale retails	4,259,282	280,100	567,592	2,461,928
Petrochemical production	13,654,575	5,611,523	114,110	4,683,894
Construction	7,333,958	455,971	(318,865)	7,941,142
Leisure and service	4,472,816	896,567	104,099	2,177,118
Photovoltaic business	21,161,125	7,540,571	1,336,673	11,778,149
Financial business	156,621,356	5,652,697	178,259	135,486,910
Others	7,475,390	2,411,942	2,936,592	2,398,071
Consolidation adjustment	(34,026,755)	(25,976,353)	(4,042,501)	(9,148,786)
Total	₩ 209,738,149	₩ 7,229,850	₩ 6,399,585	₩ 176,539,410

(in millions of Korean won)

	2022			
	Reportable segment asset	Investments in associates	Changes in non-current assets	Reportable segment liability
Explosives and production	₩ 23,114,321	₩ 8,029,028	₩ 1,943,397	₩ 14,476,327
Trading and wholesale retails	3,643,611	278,764	18,588	2,156,014
Petrochemical production	13,152,333	4,762,320	1,986,333	4,407,992
Construction	6,200,618	435,019	(1,322,205)	6,124,784
Leisure and service	4,541,529	617,215	1,097,305	2,246,677
Photovoltaic business	19,016,114	8,358,677	747,599	9,906,379
Financial business	151,666,724	5,062,585	2,876,059	129,956,192
Others	5,162,371	1,974,092	2,555,058	1,744,142
Consolidation adjustment	(29,520,695)	(25,015,456)	(3,151,240)	(7,217,489)
Total	₩ 196,976,926	₩ 4,502,244	₩ 6,750,894	₩ 163,801,018

(5) The Group's sales for each of the two years in the period ended December 31, 2023 and the book amount of non-current assets as of December 31, 2023 and 2022 by regional groups are as follows:

(in millions of Korean won)

	Sales		Non-current assets ¹	
	2023	2022	2023	2022
Domestic	₩ 40,998,758	₩ 38,048,452	₩ 27,107,825	₩ 23,333,169
America	6,273,771	4,136,506	5,073,154	2,471,073
Asia	3,104,983	3,585,068	1,387,436	1,228,013
Others	2,757,301	5,116,705	5,600,297	5,736,872
Total	₩ 53,134,813	₩ 50,886,731	₩ 39,168,712	₩ 32,769,127

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¹ Financial instruments, deferred tax assets and others are excluded from 'Non-current assets'.

(6) No single customer accounts for more than 10% of consolidated sales for each of the two years in the period ended December 31, 2023.

7. Restricted-to-use and Secured Financial Assets (Non-financial Business)

Restricted-to-use and secured financial assets as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>	Description	2023	2022
Cash and cash equivalents ¹	Guarantees for transaction and others	₩ 113,890	₩ 98,681
Short-term financial instruments	Guarantees for borrowings and transaction	157,090	152,799
Long-term financial instruments	Guarantees for deposit for opening of checking account and others	11,191	13,698
Total		₩ 282,171	₩ 265,178

¹ Includes restricted deposits for trust accounts related to the Group's own business as of December 31, 2023, such as an apartment house in Jangan, Suwon.

8. Cash and Cash Equivalents (Non-financial Business)

Details of cash and cash equivalents as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>	2023	2022
Cash on hand	₩ 578,241	₩ 604,001
Cash in bank	2,609,128	2,132,300
Other cash and cash equivalents	1,721,780	3,936,727
Total	₩ 4,909,149	₩ 6,673,028

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9. Financial Instruments by Category (Non-financial Business)

(1) Categorizations of financial assets as of December 31, 2023 and 2022 are as follows:

(in millions of Korean won)

	2023				
	Financial assets at amortized cost	Financial assets at fair value through profit or loss	Hedging derivative financial instruments	Financial assets at fair value through other comprehen- sive income	Total
Current assets:					
Cash and cash equivalents	₩ 4,572,099	₩ 337,050	₩ -	₩ -	₩ 4,909,149
Financial assets at fair value through profit or loss	-	5,669	-	-	5,669
Financial assets at fair value through other comprehensive income	-	-	-	363	363
Trade and other receivables	5,420,413	-	-	-	5,420,413
Other financial assets	493,992	132,623	1,231	-	627,846
Non-current assets:					
Financial assets at fair value through profit or loss	-	968,865	-	-	968,865
Financial assets at fair value through other comprehensive income	-	-	-	332,577	332,577
Trade and other receivables	989,602	-	-	-	989,602
Other financial assets	303,992	53,706	3,496	-	361,194
Total	₩ 11,780,098	₩ 1,497,913	₩ 4,727	₩ 332,940	₩ 13,615,678

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(in millions of Korean won)

	2022				
	Financial assets at amortized cost	Financial assets at fair value through profit or loss	Hedging derivative financial instruments	Financial assets at fair value through other comprehen- sive income	Total
Current assets:					
Cash and cash equivalents	₩ 6,042,633	₩ 630,395	₩ -	₩ -	₩ 6,673,028
Financial assets at fair value through profit or loss	-	5,946	-	-	5,946
Financial assets at fair value through other comprehensive income	-	-	-	500	500
Trade and other receivables	4,960,682	2,198	-	-	4,962,880
Other financial assets	707,785	152,076	1,954	-	861,815
Non-current assets:					
Financial assets at fair value through profit or loss	-	700,441	-	-	700,441
Financial assets at fair value through other comprehensive income	-	-	-	472,345	472,345
Trade and other receivables	396,086	-	-	-	396,086
Other financial assets	288,206	150,303	4,247	-	442,756
Total	₩ 12,395,392	₩ 1,641,359	₩ 6,201	₩ 472,845	₩ 14,515,797

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(2) Categorizations of financial liabilities as of December 31, 2023 and 2022 are as follows:

(in millions of Korean won)

		2023			
		Financial liabilities at amortized cost	Financial liabilities at fair value through profit or loss	Hedging derivative financial instruments	Total
Current liabilities:					
Trade and other payables	₩	4,977,220	₩ -	₩ -	₩ 4,977,220
Borrowings and debentures		9,671,863	-	-	9,671,863
Other financial liabilities		1,699,520	12,202	8	1,711,730
Non-current liabilities:					
Trade and other payables		357,333	-	-	357,333
Borrowings and debentures		9,815,600	-	-	9,815,600
Other financial liabilities		948,878	147,378	7,457	1,103,713
Total	₩	27,470,414	₩ 159,580	₩ 7,465	₩ 27,637,459

(in millions of Korean won)

		2022			
		Financial liabilities at amortized cost	Financial liabilities at fair value through profit or loss	Hedging derivative financial instruments	Total
Current liabilities:					
Trade and other payables	₩	4,149,014	₩ -	₩ -	₩ 4,149,014
Borrowings and debentures		8,305,473	-	-	8,305,473
Other financial liabilities		1,316,234	10,645	19,219	1,346,098
Non-current liabilities:					
Trade and other payables		415,370	-	-	415,370
Borrowings and debentures		8,067,264	-	-	8,067,264
Other financial liabilities		810,456	159,748	-	970,204
Total	₩	23,063,811	₩ 170,393	₩ 19,219	₩ 23,253,423

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(3) Net gains or losses on each category of financial instruments for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>	2023	2022
Financial assets and liabilities at fair value through profit or loss:		
Gain on transactions	₩ 177,322	₩ 50,905
Gain (loss) on valuation	792,202	(74,684)
Gain (loss) on valuation (other comprehensive income and loss) ¹	422,386	(697,707)
Financial assets and liabilities at amortized cost:		
Loss on transactions	(12,791)	(6,826)
Interest income	223,691	108,817
Interest expenses ²	(846,385)	(501,215)
Loss on valuation	(24,100)	(20,514)
Loss on foreign currency translation	(49,030)	(180,500)
Gain on foreign currency transaction	92,354	62,045
Financial assets at fair value through other comprehensive income:		
Gain (loss) on valuation (other comprehensive income and loss) ³	3,010,701	(7,299,551)
Loss on transactions	(353)	(164)
Dividend income	15,052	11,484

¹ Gain (loss) on valuation of hedging derivative financial instruments in financial business is included and the amount is after tax effect.

² Interest expenses that are directly attributable to qualifying asset are capitalized as part of the acquisition cost for each of the two years in the period ended December 31, 2023 (Note 52).

³ Gain (loss) on valuation of financial assets and liabilities at fair value through other comprehensive income in financial business is included and the amount is after tax effect.

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10. Trade and Other Receivables (Non-financial Business)

(1) Details of trade and other receivables as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>	2023		2022	
	Current	Non-current	Current	Non-current
Trade receivables	₩ 5,105,330	₩ 862,569	₩ 4,953,541	₩ 341,040
Less: provisions for impairment	(279,202)	(43,250)	(290,457)	(48,110)
Less: present value discounts	(10)	(39)	(11)	(135)
Other receivables	637,090	179,299	337,638	106,128
Less: provisions for impairment	(42,737)	(2,671)	(37,831)	(2,486)
Less: Present value discounts	(58)	(6,306)	-	(351)
Total	<u>₩ 5,420,413</u>	<u>₩ 989,602</u>	<u>₩ 4,962,880</u>	<u>₩ 396,086</u>

(2) Credit risk and provisions for impairment

The Group always recognizes lifetime ECL for trade receivables. The ECLs on these trade receivables are estimated using a provision matrix that considers an analysis of the current financial condition of the debtor adjusted for factors that are specific to the debtors, past default experiences of the debtor, general economic conditions and an assessment of both the current and future situation.

Changes in provisions for impairment of trade and other receivables for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>	2023	2022
Beginning balance	₩ 378,884	₩ 517,945
Increase in loss allowance recognized in profit or loss during the year	27,678	64,296
Receivables written off during the year as uncollectible	(31,827)	(156,879)
Unused amounts reversed	(3,578)	(7,929)
Others ¹	(3,297)	(38,549)
Ending balance ²	<u>₩ 367,860</u>	<u>₩ 378,884</u>

¹ Others include the effects of changes in exchange rate and others.

² As of December 31, 2023 and 2022, the Group applies the simplified approach, which requires expected lifetime credit losses to be recognized in accordance with KIFRS 1109.

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(3) The aging analysis of the trade and other receivables as of December 31, 2023 and 2022 is as follows:

<i>(in millions of Korean won)</i>	2023		2022	
Receivables not past due	₩	3,618,817	₩	3,480,785
		<u>3,618,817</u>		<u>3,480,785</u>
Past due but not impaired				
Less than 3 months		1,275,550		633,845
Between 3 months and 6 months		304,115		141,688
Between 6 months and 1 year		469,042		45,426
More than 1 year		720,332		999,766
Subtotal		<u>2,769,039</u>		<u>1,820,725</u>
Impaired				
Less than 3 months		46,712		23,470
Between 3 months and 6 months		36,839		23,619
Between 6 months and 1 year		25,722		33,161
More than 1 year		287,159		356,587
Subtotal		<u>396,432</u>		<u>436,837</u>
Total	₩	<u>6,784,288</u>	₩	<u>5,738,348</u>

(4) Details of transferred financial assets that are not derecognized in their entirety as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>	Trade receivables	
	2023	2022
Book amount of transferred financial assets	₩ 7,233	₩ 76,335
Related liabilities ¹	(7,233)	(76,335)

¹ The Group transferred trade receivables to banks and collected cash. As the Group has responsibility of recourse as of December 31, 2023, the related liabilities are recognized as collateralized borrowing (Note 21).

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11. Financial Assets Measured at Fair Value (Non-financial Business)

(1) Details of financial assets measured at fair value as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>	2023	2022
Financial assets at fair value through profit or loss	₩ 974,534	₩ 706,388
Financial assets at fair value through other comprehensive income	332,940	472,845
Total	₩ 1,307,474	₩ 1,179,233

(2) Details of financial assets measured at fair value through profit or loss as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>	2023	2022
Equity securities		
Listed securities	₩ 69,145	₩ 9,700
Unlisted securities	100,340	91,665
Subtotal	169,485	101,365
Debt securities		
Unlisted debt securities	589,917	506,121
Subtotal	589,917	506,121
Beneficiary certificates	215,132	98,902
Total	₩ 974,534	₩ 706,388

(3) Details of financial assets measured at fair value through other comprehensive income as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>	2023	2022
Equity securities		
Listed securities	₩ 275,189	₩ 134,474
Unlisted securities	57,105	338,371
Subtotal	332,294	472,845
Debt securities		
Public bonds	646	-
Subtotal	646	-
Total	₩ 332,940	₩ 472,845

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12. Other Financial Assets (Non-financial Business)

Details of other financial assets as of December 31, 2023 and 2022 are as follows:

(in millions of Korean won)	2023				2022			
	Current		Non-current		Current		Non-current	
Long and short-term financial instruments	₩	356,470	₩	49,776	₩	520,371	₩	22,608
Accrued income		17,346		-		92,674		-
Loans		159,306		485,989		146,299		461,493
Less: provision for impairment		(15,659)		(376,037)		(15,475)		(375,053)
Less: present value discounts		(1,237)		(12,702)		(627)		(1,925)
Guarantee deposits		31,219		184,778		40,080		205,971
Less: provision for impairment		-		(302)		-		(333)
Less: present value discounts		(669)		(27,811)		(579)		(30,496)
Derivative financial instruments		67,381		54,502		62,961		154,050
Others		13,689		3,001		16,111		6,441
Total	₩	627,846	₩	361,194	₩	861,815	₩	442,756

13. Derivative Financial Instruments (Non-financial Business)

Details of derivative financial assets and liabilities as of December 31, 2023 and 2022 are as follows:

(in millions of Korean won)	2023				2022			
	Assets		Liabilities		Assets		Liabilities	
Trading								
Currency forward	₩	26,869	₩	18,619	₩	45,368	₩	23,785
Currency swap		52,762		22,567		77,580		12,308
Interest swap		294		561		560		400
Others ^{1,2}		37,231		117,833		87,303		133,900
Fair value hedge								
Currency forward		335		1		283		3,498
Others		-		-		-		5,222
Physical derivatives		-		-		-		10,443
Cash flow hedge								
Currency swap		-		1,100		1,930		-
Interest swap		4,392		6,364		3,987		56
Total	₩	121,883	₩	167,045	₩	217,011	₩	189,612

¹ Details of other derivative financial instruments as of December 31, 2023 is as follows:

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	Details
Underlying assets	Residual equity of P&W NGPF Manufacturing Company Singapore PTE.Ltd (70%)
Striking price of call option	70% of P&W NGPF Manufacturing Company Singapore PTE.Ltd 's net asset value plus \$11,800,000 at the time of the exercise
Striking period of call option	November 30, 2024
Owner of call option	Hanwha Aerospace Co., Ltd.
Discount rate	Singapore Government bond interest rate curve

² The Group recognizes derivative financial liabilities according to the shareholders' agreement and others (Note 56).

14. Inventories (Non-financial Business)

(1) Details of inventories as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>	2023	2022
Finished goods	₩ 1,260,828	₩ 1,561,819
Less: valuation allowance	(54,650)	(56,072)
Merchandise	619,755	579,737
Less: valuation allowance	(95,473)	(70,599)
Semifinished goods	518,184	344,706
Less: valuation allowance	(11,327)	(2,742)
Work in progress	2,618,183	1,473,210
Less: valuation allowance	(13,716)	(7,777)
Raw materials	2,191,002	1,839,483
Less: valuation allowance	(63,359)	(53,194)
Supplies	273,891	239,464
Less: valuation allowance	(141)	-
Materials in transit	506,482	709,499
Total	₩ 7,749,659	₩ 6,557,534

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(2) The cost of inventories recognized as expense and included in 'cost of sales', loss on inventory valuation, obsolescence loss on inventory included in other expenses as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>		2023		2022
Cost of inventories recognized as expenses during the period	₩	14,177,844	₩	15,159,340
loss on inventory valuation		90,635		19,215
obsolescence loss on inventory		2,548		2,183

(3) The inventories are provided as collateral in relation to liabilities as of December 31, 2023 (Note 56).

15. Other Assets (Non-financial Business)

(1) Details of other assets as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>	2023		2022	
	Current	Non-current	Current	Non-current
Advance payments	₩ 2,791,152	₩ -	₩ 2,018,226	₩ -
Less: provisions for impairment	(118,637)	-	(119,020)	-
Contract execution cost	14,030	-	10,992	-
Prepaid expense	147,552	265,812	148,203	233,366
Prepaid VAT	111,589	-	108,415	-
Contract assets	1,329,761	-	927,469	-
Refund asset	33	-	72	-
Long-term advance payments	-	401,419	-	222,372
Others	1,731	36,759	2,994	25,996
Total	₩ 4,277,211	₩ 703,990	₩ 3,097,351	₩ 481,734

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16. Property, Plant and Equipment (Non-financial Business)

(1) Details of property, plant and equipment as of December 31, 2023 and 2022 are as follows:

(in millions of Korean won)

	2023				
	Acquisition cost	Accumulated depreciation	Accumulated impairment	Government grants	Book amount
Land	₩ 7,895,731	₩ -	₩ (12,735)	₩ -	₩ 7,882,996
Buildings	5,178,424	(1,747,396)	(121,760)	(280)	3,308,988
Structures	1,086,931	(551,068)	(7,546)	(44)	528,273
Machinery	10,267,230	(5,716,860)	(525,073)	(7,414)	4,017,883
Vehicles	107,401	(92,873)	(398)	-	14,130
Tools and equipment	1,093,207	(838,733)	(11,358)	(46)	243,070
Construction in progress	3,635,578	-	(31,070)	(6,649)	3,597,859
Others	325,256	(271,104)	(1)	-	54,151
Total	₩ 29,589,758	₩ (9,218,034)	₩ (709,941)	₩ (14,433)	₩ 19,647,350

(in millions of Korean won)

	2022				
	Acquisition cost	Accumulated depreciation	Accumulated impairment	Government grants	Book amount
Land	₩ 7,214,637	₩ -	₩ (18,429)	₩ -	₩ 7,196,208
Buildings	4,542,208	(1,648,082)	(47,591)	(776)	2,845,759
Structures	1,018,435	(505,446)	(5,474)	(54)	507,461
Machinery	9,524,330	(5,267,375)	(140,042)	(3,597)	4,113,316
Vehicles	104,022	(89,065)	(37)	-	14,920
Tools and equipment	1,097,540	(817,159)	(5,101)	(50)	275,230
Construction in progress	846,590	-	-	(321)	846,269
Others	320,518	(267,382)	(1)	-	53,135
Total	₩ 24,668,280	₩ (8,594,509)	₩ (216,675)	₩ (4,798)	₩ 15,852,298

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(2) Changes in property, plant and equipment for each of the two years in the period ended December 31, 2023 are as follows:

(in millions of
Korean won)

	2023						
	Beginning	Acquisitions	Disposals	Depreciation	Others ¹	Revaluation	Ending
Land	₩ 7,196,208	₩ 282,209	₩ (8,028)	₩ -	₩ 268,382	₩ 144,225	₩ 7,882,996
Buildings	2,845,759	360,302	(6,285)	(169,361)	278,573	-	3,308,988
Structures	507,461	20,882	(37)	(41,118)	41,085	-	528,273
Machinery	4,113,316	344,229	(25,956)	(669,909)	256,203	-	4,017,883
Vehicles	14,920	4,672	(1,222)	(7,550)	3,310	-	14,130
Tools and equipment	275,230	60,482	(7,571)	(85,746)	675	-	243,070
Construction in progress	846,269	3,812,040	(58,397)	-	(1,002,053)	-	3,597,859
Others	53,135	23,954	(1,203)	(9,735)	(12,000)	-	54,151
Total	₩ 15,852,298	₩ 4,908,770	₩ (108,699)	₩ (983,419)	₩ (165,825)	₩ 144,225	₩ 19,647,350

¹ Others include changes in scope of consolidation, the effects of changes in exchange rate and the change from transfer.

(in millions of
Korean won)

	2022						
	Beginning	Acquisitions	Disposals	Depreciation	Others ¹	Revaluation	Ending
Land	₩ 3,915,746	₩ 101,021	₩ (125,426)	₩ -	₩ 167,855	₩ 3,137,012	₩ 7,196,208
Buildings	2,662,164	98,787	(63,825)	(157,290)	305,923	-	2,845,759
Structures	523,986	13,714	(13,246)	(40,325)	23,332	-	507,461
Machinery	3,256,000	225,467	(18,269)	(574,412)	1,224,530	-	4,113,316
Vehicles	20,261	2,889	(4,752)	(9,182)	5,704	-	14,920
Tools and equipment	238,782	40,723	(9,445)	(101,898)	107,068	-	275,230
Construction in progress	658,899	999,326	(7,067)	-	(804,889)	-	846,269
Others	49,128	35,489	(8,521)	(12,513)	(10,448)	-	53,135
Total	₩ 11,324,966	₩ 1,517,416	₩ (250,551)	₩ (895,620)	₩ 1,019,075	₩ 3,137,012	₩ 15,852,298

¹ Others include changes in scope of consolidation, the change from transfer, the effects of changes in exchange rate and impairment loss on property, plant and equipment.

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Depreciation expense is charged to 'cost of sales' and 'selling and administrative expenses' and their details as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>	2023		2022	
Cost of sales	₩	797,107	₩	741,950
Selling and administrative expenses		186,312		153,670
Total	₩	983,419	₩	895,620

Certain property, plant and equipment are provided as collateral for borrowings as of December 31, 2023 (Note 56).

(3) During the year ended December 31, 2023, the Group revalued land through an external valuation firm (Evaluation date: October 31, 2023). For fair value evaluation, land and buildings were evaluated collectively, and the evaluation amount of the target land was calculated according to the distribution ratio. The valuation method was determined by applying the officially assessed land price method and reviewing the final amount by comparing the trial price calculated by the sales comparison approach and reviewing the rationality. The book value of land using revaluation model and historical cost model as of December 31, 2023 is as follows:

<i>(in millions of Korean won)</i>			Revaluation gain (before tax)	Revaluation loss (before tax)
	Revaluation model	Cost model		
Land	₩ 7,882,996	₩ 4,611,991	₩ 3,281,237	₩ 10,232

Meanwhile, due to the above land revaluation, the gain on revaluation recognized for the year ended December 31, 2023 is before tax.

(4) Fair value hierarchy classifications of the land that are measured at fair value as of December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>	2023			
	Level 1	Level 2	Level 3	Total
Land	₩	- ₩	- ₩ 7,882,996	₩ 7,882,996

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17. Investment Property (Non-financial Business)

(1) Details of investment property as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>		2023		2022
Land	₩	631,577	₩	1,140,531
Buildings		811,360		829,602
Others		757		803
Total	₩	<u>1,443,694</u>	₩	<u>1,970,936</u>

(2) Changes in investment property for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>	2023					
	Beginning	Acquisitions	Disposals	Gain (loss) from changes in fair value	Others ¹	Ending
Land	₩ 1,140,531	₩ 49	₩ (14,656)	₩ (1,552)	₩ (492,795)	₩ 631,577
Buildings	829,602	19,463	(908)	156,422	(193,219)	811,360
Others	803	-	(5)	-	(41)	757
Total	<u>₩ 1,970,936</u>	<u>₩ 19,512</u>	<u>₩ (15,569)</u>	<u>₩ 154,870</u>	<u>₩ (686,055)</u>	<u>₩ 1,443,694</u>

¹ Others include changes in scope of consolidation, the change from transfer and the effects of changes in exchange rate.

<i>(in millions of Korean won)</i>	2022					
	Beginning	Acquisitions	Disposals	Gain (loss) from changes in fair value	Others ¹	Ending
Land	₩ 509,368	₩ 99,381	₩ (14,288)	₩ 41,926	₩ 504,144	₩ 1,140,531
Buildings	530,966	113,694	-	23,681	161,261	829,602
Others	847	-	-	-	(44)	803
Total	<u>₩ 1,041,181</u>	<u>₩ 213,075</u>	<u>₩ (14,288)</u>	<u>₩ 65,607</u>	<u>₩ 665,361</u>	<u>₩ 1,970,936</u>

¹ Others include changes in scope of consolidation, the change from transfer and the effects of changes in exchange rate.

Certain investment property is provided as collateral for borrowings as of December 31, 2023 (Note 56).

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(3) Rental income and maintenance expenses from investment property for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>		2023		2022
Rental income	₩	88,927	₩	82,562
Maintenance expenses		(29,503)		(44,589)

(4) Application of the fair value model to investment property

Investment property is subsequently measured at fair value. The fair value of investment property was determined based on the value measured by an independent appraisal agency that has experience in appraising real estate similar to the investment property subject to evaluation and has professional qualifications. In accordance with Articles 14, 15 and 16 of the 'Rules on Appraisal and Evaluation', the officially assessed land price method, sales comparison approach, and cost method were applied to the land and buildings subject to appraisal. Fair value hierarchy classifications of investment property that is measured at fair value as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>		2023			
		Level 1	Level 2	Level 3	Total
Land	₩	-	₩	- ₩ 631,577	₩ 631,577
Buildings		-	-	811,360	811,360
Others		-	-	757	757
Total	₩	-	₩	- ₩ 1,443,694	₩ 1,443,694

<i>(in millions of Korean won)</i>		2022			
		Level 1	Level 2	Level 3	Total
Land	₩	-	₩	- ₩ 1,140,531	₩ 1,140,531
Buildings		-	-	829,602	829,602
Others		-	-	803	803
Total	₩	-	₩	- ₩ 1,970,936	₩ 1,970,936

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18. Intangible Assets (Non-financial Business)

(1) Details of intangible assets as of December 31, 2023 and 2022 are as follows:

(in millions of Korean won)

	2023				
	Acquisition cost	Accumulated amortization	Accumulated impairment	Government grants	Book amount
Goodwill	₩ 2,364,611	₩ -	₩ (86,290)	₩ -	₩ 2,278,321
Development costs	739,050	(96,300)	(27,820)	-	614,930
Membership	40,677	(1,477)	(312)	-	38,888
Others	2,053,200	(676,650)	(28,296)	(41,362)	1,306,892
Total	<u>₩ 5,197,538</u>	<u>₩ (774,427)</u>	<u>₩ (142,718)</u>	<u>₩ (41,362)</u>	<u>₩ 4,239,031</u>

(in millions of Korean won)

	2022				
	Acquisition cost	Accumulated amortization	Accumulated impairment	Government grants	Book amount
Goodwill	₩ 2,317,615	₩ -	₩ (59,250)	₩ -	₩ 2,258,365
Development costs	669,074	(122,404)	(32,365)	-	514,305
Membership	40,457	(1,342)	(886)	-	38,229
Others	1,913,783	(550,524)	(21,114)	(51,814)	1,290,331
Total	<u>₩ 4,940,929</u>	<u>₩ (674,270)</u>	<u>₩ (113,615)</u>	<u>₩ (51,814)</u>	<u>₩ 4,101,230</u>

(2) Changes in intangible assets for each of the two years in the period ended December 31, 2023 are as follows:

(in millions of Korean won)

	2023					
	Beginning	Acquisitions	Disposals	Amortization	Others ¹	Ending
Goodwill	₩ 2,258,365	₩ -	₩ -	₩ -	₩ 19,956	₩ 2,278,321
Development costs	514,305	92,318	(101)	(35,118)	43,526	614,930
Membership	38,229	738	(14,221)	(157)	14,299	38,888
Others	1,290,331	97,395	(502)	(129,981)	49,649	1,306,892
Total	<u>₩ 4,101,230</u>	<u>₩ 190,451</u>	<u>₩ (14,824)</u>	<u>₩ (165,256)</u>	<u>₩ 127,430</u>	<u>₩ 4,239,031</u>

¹ Others include changes in scope of consolidation, the change from transfer and the effects of changes in exchange rate.

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	2022					
	Beginning	Acquisitions	Disposals	Amortization	Others ¹	Ending
Goodwill	₩ 2,106,438	₩ -	₩ -	₩ -	₩ 151,927	₩ 2,258,365
Development costs	475,629	88,109	(422)	(35,107)	(13,904)	514,305
Membership	11,402	11,608	(15,765)	(157)	31,141	38,229
Others	1,112,679	113,387	(2,880)	(105,704)	172,849	1,290,331
Total	₩ 3,706,148	₩ 213,104	₩ (19,067)	₩ (140,968)	₩ 342,013	₩ 4,101,230

¹ Others include changes in scope of consolidation, the change from transfer and the effects of changes in exchange rate.

Amortization is included in 'cost of sales' and 'selling and administrative expenses' for each of the two years in the period ended December 31, 2023 and their details are as follows:

(in millions of Korean won)	2023	2022
Cost of sales	₩ 50,414	₩ 72,987
Selling and administrative expenses	114,842	67,981
Total	₩ 165,256	₩ 140,968

R&D expenses for each of the two years in the period ended December 31, 2023 are as follows:

(in millions of Korean won)	2023	2022
R&D expenses	₩ 900,307	₩ 737,059

Certain intangible asset is provided as collateral for borrowings as of December 31, 2023 (Note 56).

(3) Greenhouse Gas Emission Permits

A. Details of emission permits allocated free of charge according to the enforcement of the *Act on the Allocation and Trading of Greenhouse Gas Emission Permits* are as follows:

(Unit: KAU)	2021	2022	2023	2024	2025	Total
Free-of-charge allocation of emission permits	2,669,188	2,701,850	2,668,708	2,643,715	2,643,715	13,327,176

B. Details of changes in emission permits and emission obligations and carrying amount are as follows:

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a. Changes in emission permits and emission obligations quantities

(in KAU)

	Emission permit		Emission obligation	
	2023	2022	2023	2022
As of January 1	2,901,568	2,782,608	-	-
Increase	140,576	131,098	-	127,637
Decrease	(2,755,669)	(2,680,846)	-	(127,637)
As of December 31	286,475	232,860	-	-

b. Changes in the carrying amounts

(in millions of Korean won, KAU)

	Emission permit		Emission obligation	
	2023	2022	2023	2022
As of January 1	₩ 2,974	₩ 4,306	₩ -	₩ -
Increase	2,354	1,889	-	443
Decrease	(3,520)	(3,221)	-	(443)
As of December 31	₩ 1,808	₩ 2,974	₩ -	₩ -

(4) Impairment tests for goodwill

A. Goodwill is monitored by the management at the CGU or group of CGUs level. The following is a summary of goodwill allocation for each CGU or group of CGUs, and the Group used the same goodwill allocation method as of December 31, 2023 and 2022:

(in millions of Korean won)

	2023	2022
Hanwha General Insurance Co., Ltd.	₩ 160,187	₩ 160,187
Hanwha Aerospace Co., Ltd. (LS)	272,825	272,825
Hanwha Systems Co., Ltd.(Defense)	127,333	127,333
Hanwha Systems Co., Ltd.(ICT)	331,757	331,757
Hanwha Q CELLS Co., Ltd.	287,934	306,895
Hanwha Aerospace USA	180,913	177,812
Q Energy Mediterranee	844,419	800,856
Others	435,676	248,930
Total ¹	₩ 2,641,044	₩ 2,426,595

¹ Includes the allocation of goodwill of financial business.

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B. The recoverable amounts of CGUs have been determined based on value-in-use calculations or fair value less costs to sell. The key assumptions used for value-in-use calculations as of December 31, 2023 are as follows:

Key assumptions	Hanwha Aerospace Co., Ltd. (Land defense system)	Hanwha Systems Co., Ltd.(Defense)	Hanwha Systems Co., Ltd.(ICT)	Hanwha Q CELLSCo., Ltd.	Hanwha Aerospace USA	Q Energy Meditteranee
Operating profit ratio ¹	9.93%	3.02%	7.93%	8.80%	11.92%	15.00%
Growth rate ²	11.98%	17.43%	5.15%	19.70%	20.88%	48.94%
Perpetual growth rate	1.00%	1.00%	1.00%	-	1.00%	1.00%
Discount rate	10.84%	10.84%	10.70%	10.40%	10.60%	6.40%

¹ Operating profit ratio is a weighted-average operating profit-to-revenue ratio used to extrapolate cash flows for certain budget period.

² Growth rate is a compounded annual growth rate used to extrapolate cash flows for certain budget period.

Key assumptions	Hanwha General Insurance Co., Ltd.
Investment yield ¹	-
Discount rate	4.80%

¹ Due to the change in the valuation method, investment yield was not assumed.

19. Leases (Non-financial Business)

(1) Changes in right-of-use assets for each of the two years in the period ended December 31, 2023 and are as follows:

(in millions of Korean won)

	2023			
	Land	Buildings	Structures	Machinery
Beginning balance	₩ 70,634	₩ 352,230	₩ 5,083	₩ 111,434
Acquisitions	68,276	218,758	6,453	8,734
Disposals	(6,932)	(97,811)	-	-
Depreciation	(6,610)	(81,818)	(2,484)	(7,928)
Others ¹	(6,719)	(2,071)	(92)	(11,732)
Ending balance	₩ 118,649	₩ 389,288	₩ 8,960	₩ 100,508

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(in millions of Korean won)

	2023			
	Vehicles	Tools and equipment	Others	Total
Beginning balance	₩ 29,550	₩ 4,548	₩ 37,391	₩ 610,870
Acquisitions	23,516	500	57,871	384,108
Disposals	(3,048)	(220)	(86)	(108,097)
Depreciation	(16,409)	(1,567)	(36,600)	(153,416)
Others ¹	(4,950)	1,523	(2,514)	(26,555)
Ending balance	₩ 28,659	₩ 4,784	₩ 56,062	₩ 706,910

¹ Others include changes in scope of consolidation, changes in exchange rate and others.

(in millions of Korean won)

	2022			
	Land	Buildings	Structures	Machinery
Beginning balance	₩ 51,395	₩ 420,473	₩ 6,515	₩ 64,384
Acquisitions	21,920	58,104	1,758	59,819
Disposals	(2,593)	(80,896)	(506)	(216)
Depreciation	(6,523)	(44,815)	(2,684)	(11,369)
Others ¹	6,435	(636)	-	(1,184)
Ending balance	₩ 70,634	₩ 352,230	₩ 5,083	₩ 111,434

(in millions of Korean won)

	2022			
	Vehicles	Tools and equipment	Others	Total
Beginning balance	₩ 19,601	₩ 5,708	₩ 49,163	₩ 617,239
Acquisitions	28,216	224	37,061	207,102
Disposals	(2,872)	(1)	(1,344)	(88,428)
Depreciation	(13,613)	(1,391)	(32,515)	(112,910)
Others ¹	(1,782)	8	(14,974)	(12,133)
Ending balance	₩ 29,550	₩ 4,548	₩ 37,391	₩ 610,870

¹ Others include changes in scope of consolidation, changes in exchange rate and others.

(2) Details of lease liabilities as of December 31, 2023 and 2022 are as follows:

(in millions of Korean won)

	2023	2022
Current	₩ 220,949	₩ 166,876
Non-current	822,049	669,989

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(3) The total cash outflows and the amounts recognized in profit or loss related to leases for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>		2023		2022
Depreciation of right-of-use assets	₩	153,416	₩	112,910
Interest expense relating to lease liabilities		48,441		43,498
Expense relating to short-term leases		20,537		16,293
Expense relating to leases of low-value assets		10,922		11,875
Expense relating to variable lease payments not included in lease liabilities		22,902		21,382
Income from subleasing right-of-use assets		14,791		8,134
The total cash outflow for leases		204,588		206,347

20. Trade and Other Payables (Non-financial Business)

Details of trade and other payables as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>	2023		2022	
	Current	Non-current	Current	Non-current
Trade payables	₩ 4,066,698	₩ 183,396	₩ 3,281,344	₩ 285,280
Other payables	910,522	173,937	867,670	130,090
Total ¹	₩ 4,977,220	₩ 357,333	₩ 4,149,014	₩ 415,370

21. Borrowings and Debentures (Non-financial Business)

(1) Borrowings and debentures as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>	2023		2022	
	Current	Non-current	Current	Non-current
Short-term borrowings	₩ 5,929,440	₩ -	₩ 4,876,601	₩ -
Long-term borrowings	1,832,011	5,738,578	1,683,974	4,229,070
Debentures	1,911,605	4,091,263	1,745,791	3,850,303
Less: discount on bonds	(1,193)	(14,241)	(893)	(12,109)
Total	₩ 9,671,863	₩ 9,815,600	₩ 8,305,473	₩ 8,067,264

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(2) Details of bank borrowings as of December 31, 2023 and 2022 are as follows:

A. Short-term borrowings (including current portion of long-term borrowings)

<i>(in millions of Korean won)</i>		Interest rate		2023	2022
	Creditor	(%)			
Bank overdraft	Woori Bank	-	₩	-	₩ 256
Usance	Daegu Bank and others	1.20 ~ 5.95		15,403	191,016
Collateralized borrowings ¹	Shinhan Bank and others	5.38 ~ 7.00		7,233	76,335
Project finance	Kookmin Bank	6.19		210,000	106,520
General borrowings	Korea Development Bank and others	0.57 ~ 7.31		5,696,804	4,502,474
Add: Current portion				<u>1,832,011</u>	<u>1,683,974</u>
	Total		₩	<u>7,761,451</u>	<u>₩ 6,560,575</u>

¹ The Group transferred trade receivables to banks and collected cash. This transaction is accounted for as a collateralized borrowing (Note 10).

B. Long-term borrowings

<i>(in millions of Korean won)</i>		Interest rate		2023	2022
	Creditor	(%)			
General loan (long-term)	Korea Exim bank and others	0.21 ~ 7.59	₩	5,982,556	₩ 4,768,045
Loan for industrial facilities	Korea Development Bank and others	2.00 ~ 5.07		523,078	429,656
Project financing ("PF")	DB Insurance and others	3.30 ~ 7.38		196,695	452,130
Loan for special operating funds	NH bank	-		-	47,233
Facility for foreign currencies	Citi Bank and others	0.00 ~ 7.14.		868,260	215,980
	Subtotal			<u>7,570,589</u>	<u>5,913,044</u>
	Less: Current portion			<u>(1,832,011)</u>	<u>(1,683,974)</u>
	Total		₩	<u>5,738,578</u>	<u>₩ 4,229,070</u>

In addition, the Group provided property, plant and equipment and others as collateral in relation to the above long- and short-term borrowings (Note 56).

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(3) Details of debentures as of December 31, 2023 and 2022, are as follows:

<i>(in millions of Korean won)</i>	2023		2022	
Hanwha Corporation	₩	1,564,455	₩	1,811,169
Hanwha Solutions Co., Ltd.		2,718,200		2,490,210
Hanwha Aerospace Co., Ltd.		1,084,666		1,001,620
Hanwha Systems Co., Ltd.		80,000		30,000
Hanwha Q CELLS Investment Co., Ltd.		-		80,004
Hanwha Q CELLS Malaysia Sdn. Bhd.		41,884		42,735
Hanwha Q CELLS Americas Holdings. Corp.		476,244		-
H Properties TMK		37,419		953
REC Silicon ASA		-		139,403
Subtotal		6,002,868		5,596,094
Less: present value discount		(15,434)		(13,002)
Less: current portion (including discount on bonds)		(1,910,412)		(1,744,898)
Total	₩	4,077,022	₩	3,838,194

For some borrowings and debentures., the Group agreed to comply with requirements on credit ratings, debt ratios and EBITDA.

22. Other Financial Liabilities (Non-financial Business)

(1) Details of other financial liabilities as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>	2023		2022	
	Current	Non-current	Current	Non-current
Derivatives	₩ 12,210	₩ 154,835	₩ 29,865	₩ 159,747
Deposits received	172,850	840,856	179,806	776,747
Less: present value discounts	(3,472)	(237,764)	(3,670)	(223,542)
Accrued expenses	1,504,208	299,516	1,130,133	193,120
Financial guarantee contract liabilities ¹	25,934	45,850	9,964	65,599
Others	220,949	822,469	166,876	668,521
Total	₩ 1,932,679	₩ 1,925,762	₩ 1,512,974	₩ 1,640,192

¹ The Group provides developers with credit guarantees for housing project loans and others as of December 31, 2023 (Note 56).

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(2) Carrying amount and fair value of non-current deposits received for non-financial business as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>	2023		2022	
	Carrying amount	Fair value	Carrying amount	Fair value
Non-current deposits received	₩ 603,092	₩ 547,329	₩ 553,205	₩ 568,255

23. Other Liabilities (Non-financial Business)

(1) Details of other liabilities as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>	2023		2022	
	Current	Non-current	Current	Non-current
Advances received	₩ 6,445,351	₩ 132,610	₩ 3,956,930	₩ 141,055
Withholdings	109,440	-	115,019	-
VAT payables	34,337	-	51,127	-
Unearned revenues ¹	199,352	261,246	96,402	252,900
Refund liabilities	1,422	-	1,352	-
Contract liabilities ²	2,160,304	807,717	1,988,620	804,557
Total	₩ 8,950,206	₩ 1,201,573	₩ 6,209,450	₩ 1,198,512

¹ Unearned revenues include a portion of the balance related to contract liabilities.

² Include due to overbilled construction.

(2) Details of contract liabilities as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>	2023	2022
Due to customers for contract work	₩ 1,580,709	₩ 1,444,212
Advances received	1,350,755	1,306,989
Customer loyalty	31,776	39,541
Others	4,781	2,435
Total	₩ 2,968,021	₩ 2,793,177

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24. Post-employment Benefits (Non-financial Business)

(1) Details of net defined benefit liabilities as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>	2023		2022	
Present value of defined benefit obligations	₩	1,962,389	₩	1,708,435
Fair value of plan assets		(269,454)		(161,951)
Total	₩	<u>1,692,935</u>	₩	<u>1,546,484</u>

(2) Movements in the defined benefit obligations for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>	2023		2022	
Beginning balance	₩	1,708,435	₩	1,828,285
Current service cost		206,468		192,552
Interest expense		96,986		61,608
Past service cost		(2,393)		11
Remeasurements:				
Actuarial gain from changes in demographic assumptions		(4,934)		(60,597)
Actuarial loss (gain) from change in financial assumptions		121,308		(200,587)
Actuarial loss from experience adjustments		33,951		60,957
Actuarial gain from retirement age adjustments		(7,490)		(158)
Payments from plans:				
Benefit payments		(194,962)		(147,044)
Others ¹		5,020		(26,592)
Ending balance	₩	<u>1,962,389</u>	₩	<u>1,708,435</u>

¹ Others include the impact of changes in consolidations scope, changes in exchange rate and transfer to and from associates.

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(3) Movements in the fair value of plan assets for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>	2023		2022	
Beginning balance	₩	161,951	₩	137,452
Interest income		24,112		10,607
Remeasurements ¹		(4,243)		(5,352)
Contributions		141,460		57,506
Benefit payments		(31,596)		(27,777)
Others ²		(22,230)		(10,485)
Ending balance	₩	<u>269,454</u>	₩	<u>161,951</u>

¹ Exclude the amount that is included in interest income.

² Others include the impact of changes in consolidations scope, changes in exchange rate and transfer to and from associates.

(4) Amounts recognized in the consolidated statements of comprehensive income for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>	2023		2022	
Current service cost	₩	204,075	₩	192,563
Net Interest expense		72,874		51,000
Expense included in employee benefit	₩	<u>276,949</u>	₩	<u>243,563</u>

The total costs incurred in the current and prior periods have been replaced with manufacturing costs, selling and administrative expenses, and construction-in-progress included in property, plant and equipment:

<i>(in millions of Korean won)</i>	2023		2022	
Manufacturing costs	₩	158,573	₩	144,507
Selling and administrative expenses		117,138		98,371
Assets under construction for property, plant and equipment		1,238		685
Expense included in employee benefit	₩	<u>276,949</u>	₩	<u>243,563</u>

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(5) Defined Contribution

The Group operates defined contribution retirement pension for employees for eligible employees. Plan assets are operated in the form of funds independently from the Group's other assets by the control of fiduciary. If an employee leaves the Group before meeting the qualification to obtain vested rights, his contribution benefit will be decreased due to the early retirement. This also leads to the decrease of contribution benefit payables to the employee by the same amount of decreased contribution from the early retirement.

The expenses from defined contribution retirement pension for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>	2023	2022
Expenses related to defined contribution retirement pension	₩ 98,553	₩ 35,321

(6) Other long-term employee benefits

The Group provide long-term employee benefits that are provided to employees with certain level of service periods. The expected cost of these benefits is accrued over the period of employment using the same accounting methodology as used for defined benefit pension plans. The re-measurement amount derived from change in actuarial assumptions and the difference between actuarial assumption and the actual result is recognized as a profit and loss. This benefit is assessed by an independent and qualified actuary at the end of every year end.

As of and for the year ended December 31, 2023, the Group recognizes liabilities of ₩ 120,261 million (₩ 108,547 million in 2022) and expense of ₩ 28,622 million (₩ 7,660 million in 2022) in connection with the long-term employee benefits.

(7) The significant actuarial assumptions as of December 31, 2023 and 2022 are as follows:

<i>(in percentage, %)</i>	2023	2022
Discount rate	1.20 ~ 5.69	1.10 ~ 6.38
Expected salary growth rate	2.01 ~ 4.76	2.08 ~ 4.84

(8) The sensitivity of the defined benefit obligation to changes in the principal assumptions is:

	Changes in principal assumption	Effect on defined benefit obligations
Discount rate	Increase of 1%	6.31% decrease
	Decrease of 1%	7.21% increase
Expected salary growth rate	Increase of 1%	7.40% increase
	Decrease of 1%	6.48% decrease

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Because there is a correlation between actuarial assumptions, the sensitivity analysis above will not show actual changes in the defined benefit obligation, as changes in assumptions will not occur independently. Also, in the above sensitivity analysis, the present value of the defined benefit obligation was measured using the projected unit credit method applied to measure the defined benefit obligation in the consolidated statement of financial position.

(9) Plan assets as of December 31, 2023 and 2022 consist of:

(in millions of Korean won)	2023		2022	
	Amount	Composition	Amount	Composition
Principal guaranteed financial instruments	₩ 268,906	99.80%	₩ 156,376	96.56%
Transferred to National Pension Fund and others	548	0.20%	325	0.20%
Others	-	-	5,250	3.24%
Total	₩ 269,454	100.00%	₩ 161,951	100.00%

(10) The weighted-average duration of the defined benefit obligation is 1.02~8.10 years.

25. Provisions (Non-financial Business)

(1) Details of provisions as of December 31, 2023 and 2022 are as follows:

(in millions of Korean won)	2023		2022	
	Current	Non-current	Current	Non-current
Provision for construction warranties	₩ 15,308	₩ 104,185	₩ 13,011	₩ 86,899
Provision for product warranties	64,995	129,867	68,230	118,701
Provision for construction losses	217,421	-	92,534	-
Others	38,610	158,815	108,463	130,497
Total	₩ 336,334	₩ 392,867	₩ 282,238	₩ 336,097

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(2) Changes in the provisions for each of the two years in the period ended December 31, 2023 are as follows:

(in millions of Korean won)

	2023				
	Provision for construction warranties	Provision for product warranties	Provision for construction losses	Others	Total
Beginning	₩ 99,910	₩ 186,931	₩ 92,534	₩ 238,959	₩ 618,334
Increase	38,374	29,178	306,235	133,309	507,096
Used during year	(9,971)	(14,437)	(146,726)	(38,053)	(209,187)
Reversal	(7,821)	(9,650)	(67,874)	(55,158)	(140,503)
Others ¹	(999)	2,840	33,252	(81,632)	(46,539)
Ending	₩ 119,493	₩ 194,862	₩ 217,421	₩ 197,425	₩ 729,201

¹ Others include changes due to business combination and the effect of changes in exchange rate.

(in millions of Korean won)

	2022				
	Provision for construction warranties	Provision for product warranties	Provision for construction losses	Others	Total
Beginning	₩ 99,131	₩ 175,030	₩ 48,449	₩ 319,225	₩ 641,835
Increase	17,104	46,504	49,796	58,635	172,039
Used during year	(4,785)	(31,668)	(43,862)	(46,906)	(127,221)
Reversal	(3,004)	(33)	(29,636)	(14,704)	(47,377)
Others ¹	(8,536)	(2,902)	67,787	(77,291)	(20,942)
Ending	₩ 99,910	₩ 186,931	₩ 92,534	₩ 238,959	₩ 618,334

¹ Others include changes business combination and the effect of changes in exchange rate.

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26. Construction Contract (Non-financial Business)

(1) Changes in construction contract balance for the year ended December 31, 2023 are as follows:

(in millions of Korean won)

	2023			
	Beginning	Changes	Recognized construction revenue	Ending
Domestic architecture construction	₩ 1,417,992	₩ 1,140,579	₩ (1,342,862)	₩ 1,215,709
Domestic development construction	8,451,559	871,963	(1,492,257)	7,831,265
Domestic civil construction	2,084,608	863,531	(519,646)	2,428,493
Domestic plant construction	671,236	364,245	(564,601)	470,880
Overseas subcontract ¹	7,280,998	280,208	(198,574)	7,362,632
Aviation engine division	342,126	761,616	(373,324)	730,418
Defense division	5,586,210	2,828,939	(1,706,780)	6,708,369
Photovoltaic	427,306	2,165,409	(1,421,385)	1,171,330
Others	832,555	453,238	(601,361)	684,432
Total	₩ 27,094,590	₩ 9,729,728	₩ (8,220,790)	₩ 28,603,528

¹ The Group negotiated with NIC a revised contract for the purpose of resuming the entire construction of Bismayah New City Project / Bismayah Social Infra. Project and agreed to partially resume the above construction under the condition of making some unpaid progress payment. The agreement was made to partially resume construction on January 3, 2023.

However, even after the agreement on partial resumption of construction, the Group continues to negotiate a revised contract with NIC to resume full-scale construction of Bismayah New Town and infrastructure, under the existing contract terms.

The outcome of negotiations on the revised contract between the Group and NIC is currently uncertain and the amount cannot be reasonably estimated, therefore, the amount is not included in the consolidated financial statements for the year ended December 31, 2023.

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(2) Details of accumulated contract gains and losses in relation to construction contract in progress as of December 31, 2023 and 2022 are as follows:

(in millions of Korean won)

	2023			
	Accumulated contract revenue	Accumulated contract cost	Accumulated margin	Retention
Domestic architecture construction	₩ 711,899	₩ 693,102	₩ 18,797	₩ -
Domestic development construction	2,138,939	1,987,564	151,375	-
Domestic civil construction	1,620,231	1,493,627	126,604	-
Domestic plant construction	1,282,444	1,255,407	27,037	-
Overseas subcontract	7,623,579	6,551,941	1,071,638	36,586
Aviation engine division	794,913	747,650	47,263	-
Defense division	2,381,952	2,417,196	(35,244)	-
Photovoltaic	1,766,706	1,640,846	125,860	-
Others	3,133,034	2,863,090	269,944	-
Total	₩ 21,453,697	₩ 19,650,423	₩ 1,803,274	₩ 36,586

(in millions of Korean won)

	2022			
	Accumulated contract revenue	Accumulated contract cost	Accumulated margin	Retention
Domestic architecture construction	₩ 2,154,977	₩ 1,968,257	₩ 186,720	₩ -
Domestic development construction	3,095,617	2,685,260	410,357	-
Domestic civil construction	2,130,185	1,998,024	132,161	-
Domestic plant construction	1,220,609	1,123,936	96,673	-
Overseas subcontract	7,556,841	6,492,491	1,064,350	91,972
Aviation engine division	503,680	487,545	16,135	-
Defense division	4,200,783	3,932,273	268,510	-
Photovoltaic	426,313	409,077	17,236	-
Others	1,053,458	939,870	113,588	-
Total	₩ 22,342,463	₩ 20,036,733	₩ 2,305,730	₩ 91,972

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(3) Details of contract assets and contract liabilities as of December 31, 2023 and 2022 are as follows:

(in millions of Korean won)

	2023			
	Contract assets		Contract liabilities	
Domestic architecture construction	₩	102,608	₩	26,970
Domestic development construction		38,999		293,217
Domestic civil construction		142,511		74,445
Domestic plant construction		20,241		22,099
Overseas subcontract ¹		113		929,832
Aviation engine division		127,447		277,675
Defense division		229,626		730,953
Photovoltaic		375,922		168,729
Others		292,294		59,893
Total	₩	1,329,761	₩	2,583,813

¹ Certain payment related to overseas subcontract were received in advance and accounted for advances received. Billings are made according to certain milestone; thus, contract assets can be increased prior to the milestone.

(in millions of Korean won)

	2022			
	Contract assets		Contract liabilities	
Domestic architecture construction	₩	169,756	₩	31,886
Domestic development construction		128,147		325,719
Domestic civil construction		122,972		50,859
Domestic plant construction		11,969		48,736
Overseas subcontract ¹		4,758		945,724
Aviation engine division		75,969		225,713
Defense division		97,236		862,469
Photovoltaic		58,956		9,297
Others		255,607		27,188
Total	₩	925,370	₩	2,527,591

¹ Certain fees related to overseas subcontract were received as payment for construction work in advance and accounted for advances receivable. Billings are made according to certain milestone; thus, contract assets can be increased prior to the milestone.

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(4) Amount of effect on current and future profits or losses caused by changes in construction contract in progress for each of the two years in the period ended December 31, 2023 is as follows:

(in millions of
Korean won)

		2023							
	Provision for construction losses	Changes in estimated total contract revenue	Changes in estimated total contract cost	Effect on current profit or losses	Effect on future profits and losses	Changes in contract assets	Changes in contract liabilities		
Domestic architecture construction	₩ 14,630	₩ 280,770	₩ 348,774	₩ (71,779)	₩ 3,775	₩ 13,280	₩ (85,059)		
Domestic development construction	14,266	341,492	464,951	(118,555)	(4,904)	20,022	(138,577)		
Domestic civil construction	729	372,193	319,402	13,785	39,006	19,308	(5,523)		
Domestic plant construction	363	105,913	167,165	(59,436)	(1,816)	2,871	(62,307)		
Overseas subcontract	(229)	6,854	21,175	4,068	(18,389)	63,401	(59,333)		
Aviation engine division	7,473	2,270	15,080	(8,527)	(4,283)	4,778	(13,305)		
Defense division	54,401	183,716	222,774	(39,666)	608	16,335	(56,001)		
Photovoltaic	-	33,386	28,316	30,295	(25,225)	27,546	2,749		
Others	8,553	(7,587)	(6,512)	(7,545)	6,470	45,518	(53,063)		
total	₩ 100,186	₩ 1,319,007	₩ 1,581,125	₩ (257,360)	₩ (4,758)	₩ 213,059	₩ (470,419)		

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Korean won)

		2022											
		Provision for construction losses	Changes in estimated total contract revenue	Changes in estimated total contract cost	Effect on current profit or losses	Effect on future profits and losses	Changes in contract assets	Changes in contract liabilities					
Domestic architecture construction	₩	-	₩ 33,915	₩ 31,255	₩ 2,572	₩ 88	₩ 5,402	₩ (2,830)					
Domestic development construction		1,218	8,218	(5,754)	20,959	(6,987)	25,894	(4,935)					
Domestic civil construction		630	36,472	29,943	2,687	3,842	2,806	(119)					
Domestic plant construction		-	35,363	33,016	43	2,304	43	-					
Overseas subcontract		572	-	(9,631)	9,631	-	9,631	-					
Aviation engine division		9,644	10,360	11,438	(716)	(362)	1,128	(1,844)					
Defense division		38,981	22,297	29,411	(2,672)	(4,442)	34,406	(37,078)					
Photovoltaic		-	4,632	3,927	486	219	1,066	(580)					
Others		7,480	33,505	56,918	(9,922)	(13,491)	16,896	(26,818)					
total	₩	58,525	₩ 184,762	₩ 180,523	₩ 23,068	₩ (18,829)	₩ 97,272	₩ (74,204)					

(5) Details of construction contract in progress for which the amount of contract revenue is more than 5% of total revenue as of December 31, 2023 and 2022 are as follows:

(in millions of
Korean won)

Unit: millions of Korean won)	2023								
	Contract	Date of contract	Due date	Rate of progress (%)	Contract assets		Receivables of construction		
					Total amount	Provision	Total amount	Provision	
Overseas subcontract	BNCP	2012-05-30	2027-12-31	45.41%	₩	- ₩	- ₩	344,577 ₩	13,286

(in millions of
Korean won)

Korean won)					2022					
					Contract assets		Receivables of construction			
	Contract	Date of contract	Due date	Rate of progress (%)	Total amount	Provision	Total amount	Provision		
Overseas subcontract	BNCP	2012-05-30	2027-12-31	46.70%	₩ -	₩ -	₩ 592,635	₩ 11,982		

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27. Financial Instruments by Category (Financial Business)

(1) Categorizations of financial instruments as of December 31, 2023 and 2022 are as follows:

(in millions of Korean won)

	2023				
	Financial assets at amortized cost	Financial assets at fair value through profit or loss	Hedging derivative financial instruments	Financial assets at fair value through other comprehensive income	Total
Cash and cash equivalents	₩ 3,619,590	₩ -	₩ -	₩ -	₩ 3,619,590
Deposits	1,674,845	-	-	159,946	1,834,791
Securities	11,961,200	47,378,573	-	48,220,823	107,560,596
Loans and other receivables	23,630,109	535,701	-	1,613,146	25,778,956
Derivative financial assets	-	441,034	413,932	-	854,966
Other financial assets	2,549,206	-	-	-	2,549,206
Total	₩ 43,434,950	₩ 48,355,308	₩ 413,932	₩ 49,993,915	₩ 142,198,105

(in millions of Korean won)

	2022				
	Financial assets at amortized cost	Financial assets at fair value through profit or loss	Hedging derivative financial instruments	Financial assets at fair value through other comprehensive income	Total
Cash and cash equivalents	₩ 2,924,330	₩ -	₩ -	₩ -	₩ 2,924,330
Deposits	1,750,329	-	-	148,531	1,898,860
Securities	11,681,832	53,719,500	-	36,154,376	101,555,708
Loans and other receivables	24,666,996	685,632	-	1,562,952	26,915,580
Derivative financial assets	-	574,131	433,187	-	1,007,318
Other financial assets	2,161,976	-	-	-	2,161,976
Total	₩ 43,185,463	₩ 54,979,263	₩ 433,187	₩ 37,865,859	₩ 136,463,772

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(2) Categorizations of financial liabilities as of December 31, 2023 and 2022 are as follows:

(in millions of Korean won)

	2023			
	Financial liabilities at fair value through profit or loss	Hedging derivative financial instruments	Financial liabilities at amortized cost	Total
Deposit liabilities	₩ -	₩ -	₩ 2,236,804	₩ 2,236,804
Derivative financial liabilities	627,281	765,623	-	1,392,904
Other financial liabilities	1,879,109	-	13,928,623	15,807,732
Total	₩ 2,506,390	₩ 765,623	₩ 16,165,427	₩ 19,437,440

(in millions of Korean won)

	2022			
	Financial liabilities at fair value through profit or loss	Hedging derivative financial instruments	Financial liabilities at amortized cost	Total
Deposit liabilities	₩ -	₩ -	₩ 1,986,810	₩ 1,986,810
Derivative financial liabilities	524,866	1,782,053	-	2,306,919
Other financial liabilities	2,769,311	-	12,030,880	14,800,191
Total	₩ 3,294,177	₩ 1,782,053	₩ 14,017,690	₩ 19,093,920

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(3) Net gains or losses on each category of financial instruments for each of the two years in the period ended December 31, 2023 are as follows:

(in millions of Korean won)	2023													
	Interest income		Dividend income		Commission income		Interest expense		Gain (loss) on valuation and transaction		Gain (loss) on foreign currency transaction and translation		Total	
Financial assets at fair value through profit or loss	₩	761,798	₩	365,568	₩	572	₩	-	₩	252,404	₩	255,752	₩	1,636,094
Financial assets at fair value through other comprehensive income		1,299,712		26,577		-		-		3,379,710		136,169		4,842,168
Financial assets at amortized cost		1,752,085		-		21,546		-		1,165,474		204,520		3,143,625
Derivative financial instruments		-		-		-		-		(1,714,949)		-		(1,714,949)
Financial liabilities at amortized cost		-		-		-		(499,308)		-		(32,569)		(531,877)
Financial liabilities at fair value through profit or loss		-		-		-		(1,560)		(187,446)		-		(189,006)
Total	₩	3,813,595	₩	392,145	₩	22,118	₩	(500,868)	₩	2,895,193	₩	563,872	₩	7,186,055

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(in millions of Korean won)	2022													
	Interest income		Dividend income		Commission income		Interest expense		Gain (loss) on valuation and transaction		Gain (loss) on foreign currency transaction and translation		Total	
Financial assets at fair value through profit or loss	₩	255,074	₩	306,884	₩	790	₩	-	₩	(2,831,648)	₩	(19,763)	₩	(2,288,663)
Financial assets at fair value through other comprehensive income		915,096		30,307		-		-		(2,129,789)		268,701		(915,685)
Financial assets at amortized cost		2,242,532		-		18,028		-		790,830		476,980		3,528,370
Derivative financial instruments		-		-		-		-		(2,325,866)		-		(2,325,866)
Financial liabilities at amortized cost		-		-		-		(299,065)		-		(72,923)		(371,988)
Financial liabilities at fair value through profit or loss		-		-		-		(938)		(71,280)		-		(72,218)
Total	₩	3,412,702	₩	337,191	₩	18,818	₩	(300,003)	₩	(6,567,753)	₩	652,995	₩	(2,446,050)

28. Cash and Cash Equivalents and Deposits (Financial Business)

(1) Details of cash and cash equivalents and deposits as of December 31, 2023 and 2022 are as follows:

(in millions of Korean won)	2023	2022
Cash and cash equivalents		
Cash and demand deposits	₩ 3,619,590	₩ 2,923,167
Deposits		
Term deposits	770,762	1,037,488
Others	904,084	712,866
Provision for impairment	(1)	(25)
Others deposits(Structured deposits)	159,946	148,532
Subtotal	1,834,791	1,898,861
Total	₩ 5,454,381	₩ 4,822,028

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(2) Details of restricted to use deposits as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>		2023		2022		Reason for restrictions
Deposits	The Korea Securities Finance Corporation and others	₩	1,013,571	₩	543,269	Collateral for transactions and others
	Vietinbank and others		15,960		5,376	Collateral for overdraft
	The Korea Securities Finance Corporation		-		1,077	Investor's deposit
	Hana Bank and others		73,878		55,255	Others
	Total	₩	1,103,409	₩	604,977	

29. Financial assets and Securities (Financial Business)

(1) Details of securities as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>	2023		2022	
Financial assets at fair value through profit or loss	₩	47,378,573	₩	44,573,610
Financial assets at fair value through other comprehensive income		48,220,822		35,651,787
Financial assets at amortized cost		11,961,200		21,316,130
Total	₩	107,560,595	₩	101,541,527

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(2) Details of financial assets at fair value through profit or loss as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>		2023	2022
Equity securities			
Stocks	₩	4,253,249	₩ 3,643,030
Investments		239,942	208,932
Subtotal		4,493,191	3,851,962
Debt securities			
Government and public bonds		3,446,896	2,673,992
Special bonds		5,002,259	4,535,689
Financial bonds		931,045	1,271,742
Corporate bonds		3,665,772	3,479,588
Subtotal		13,045,972	11,961,011
Beneficiary certificates		16,997,710	16,100,795
Overseas securities		10,789,588	10,588,250
Other securities		2,052,112	2,071,592
Total	₩	47,378,573	₩ 44,573,610

In addition, the Group provides part of its financial assets at fair value through profit or loss as collateral for repurchase agreements (Note 56).

(3) Details of financial assets at fair value through other comprehensive income as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>		2023	2022
Equity securities			
Stocks	₩	695,046	₩ 763,435
Investments		604	904
Subtotal		695,650	764,339
Debt securities			
Government and public bonds		24,705,882	14,201,716
Special bonds		11,765,931	5,951,218
Financial bonds		293,470	442,003
Corporate bonds		4,577,115	4,737,924
Others ¹		2,567,956	2,920,319
Subtotal		43,910,354	28,253,180
Overseas securities		3,113,020	6,061,506
Other securities		501,798	572,762
Total	₩	48,220,822	₩ 35,651,787

¹ Others are loaned financial assets to Korea Securities Depository that do not meet the derecognition requirements in accordance with KIFRS 1109. The Group receives the commission from the loan of financial assets.

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(4) Changes in carrying amount of financial assets at fair value through other comprehensive income (debt securities) for each of the two years in the period ended December 31, 2023 are as follows:

(in millions of Korean won)	2023						
	12 months expected credit losses measurement		Lifetime expected credit losses		Credit-impaired financial assets		Total
Beginning balance	₩	28,255,723	₩	-	₩	-	₩ 28,255,723
Transfer to 12-month ECLs		-		-		-	-
Transfer to lifetime ECLs		-		-		-	-
Transfer to credit- impaired financial assets		-		-		-	-
Additions(+)		10,917,386		-		-	10,917,386
Repayments(-)		(2,531,727)		-		-	(2,531,727)
Others ¹		7,271,772		-		-	7,271,772
Ending balance	₩	43,913,154	₩	-	₩	-	₩ 43,913,154

¹ Others include valuation of fair value, foreign currency translation and others.

(in millions of Korean won)	2022						
	12 months expected credit losses measurement		Lifetime expected credit losses		Credit-impaired financial assets		Total
Beginning balance	₩	43,280,116	₩	-	₩	-	₩ 43,280,116
Transfer to 12-month ECLs		-		-		-	-
Transfer to lifetime ECLs		-		-		-	-
Transfer to credit- impaired financial assets		-		-		-	-
Additions(+)		3,925,217		-		-	3,925,217
Repayments(-)		(3,996,094)		-		-	(3,996,094)
Others ¹		(14,953,516)		-		-	(14,953,516)
Ending balance	₩	28,255,723	₩	-	₩	-	₩ 28,255,723

¹ Others include valuation of fair value, foreign currency translation and others.

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(5) Changes in provision for impairment on financial assets at fair value through other comprehensive income (debt securities) for each of the two years in the period ended December 31, 2023 are as follows:

(in millions of Korean won)	2023			
	12 months expected credit losses measurement	Lifetime expected credit losses	Credit-impaired financial assets	Total
Beginning balance	₩ 2,542	₩ -	₩ -	₩ 2,542
Transfer to 12-month ECLs	-	-	-	-
Transfer to lifetime ECLs	-	-	-	-
Transfer to credit- impaired financial assets	-	-	-	-
Increase in provision	13	-	-	13
Written off and others	-	-	-	-
Others ¹	245	-	-	245
Ending balance	₩ 2,800	₩ -	₩ -	₩ 2,800

¹ Others include valuation of fair value, foreign currency translation and others.

(in millions of Korean won)	2022			
	12 months expected credit losses measurement	Lifetime expected credit losses	Credit-impaired financial assets	Total
Beginning balance	₩ 2,991	₩ -	₩ -	₩ 2,991
Transfer to 12-month ECLs	-	-	-	-
Transfer to lifetime ECLs	-	-	-	-
Transfer to credit- impaired financial assets	-	-	-	-
Reversal	(449)	-	-	(449)
Written off and others	-	-	-	-
Others ¹	-	-	-	-
Ending balance	₩ 2,542	₩ -	₩ -	₩ 2,542

¹ Others include valuation of fair value, foreign currency translation and others.

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(6) Details of financial assets at amortized cost as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>	2023		2022	
Debt securities				
Government and public bonds	₩	4,371,918	₩	7,747,309
Special bonds		1,670,902		7,632,363
Corporate bonds		313,478		758,633
Subtotal		<u>6,356,298</u>		<u>16,138,305</u>
Overseas securities		5,606,094		5,178,467
Provision for impairment		(1,192)		(642)
Total	₩	<u>11,961,200</u>	₩	<u>21,316,130</u>

(7) Changes in carrying amount of financial assets at amortized cost for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>	2023							
	12 months expected credit losses measurement		Lifetime expected credit losses		Credit-impaired financial assets	Total		
Beginning balance	₩	21,316,772	₩	-	₩	-	₩	21,316,772
Transfer to 12-month ECLs		-		-		-		-
Transfer to lifetime ECLs		-		-		-		-
Transfer to credit-impaired financial assets		-		-		-		-
Additions(+)		513,786		-		-		513,786
Repayments(-)		(415,502)		-		-		(415,502)
Others ¹		(9,452,664)		-		-		(9,452,664)
Ending balance	₩	11,962,392	₩	-	₩	-	₩	11,962,392

¹ Others include valuation of fair value, foreign currency translation and others.

<i>(in millions of Korean won)</i>	2022							
	12 months expected credit losses measurement		Lifetime expected credit losses		Credit-impaired financial assets	Total		
Beginning balance	₩	22,514,031	₩	-	₩	-	₩	22,514,031
Transfer to 12-month ECLs		-		-		-		-
Transfer to lifetime ECLs		-		-		-		-
Transfer to credit-impaired financial assets		-		-		-		-
Additions(+)		3,167,339		-		-		3,167,339
Repayments(-)		(4,720,426)		-		-		(4,720,426)
Others ¹		355,828		-		-		355,828
Ending balance	₩	21,316,772	₩	-	₩	-	₩	21,316,772

¹ Others include valuation of fair value, foreign currency translation and others.

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(8) Changes in provision for impairment on financial assets at amortized cost for each of the two years in the period ended December 31, 2023 are as follows:

(in millions of Korean won)	2023						
	12 months expected credit losses measurement		Lifetime expected credit losses		Credit-impaired financial assets		Total
Beginning balance	₩	642	₩	-	₩	-	₩ 642
Transfer to 12-month ECLs		-		-		-	-
Transfer to lifetime ECLs		-		-		-	-
Transfer to credit- impaired financial assets		-		-		-	-
Increase in provision		550		-		-	550
Written off and others		-		-		-	-
Others ¹		-		-		-	-
Ending balance	₩	1,192	₩	-	₩	-	₩ 1,192

¹ Others include valuation of fair value, foreign currency translation and others.

(in millions of Korean won)	2022						
	12 months expected credit losses measurement		Lifetime expected credit losses		Credit-impaired financial assets		Total
Beginning balance	₩	632	₩	-	₩	-	₩ 632
Transfer to 12-month ECLs		-		-		-	-
Transfer to lifetime ECLs		-		-		-	-
Transfer to credit- impaired financial assets		-		-		-	-
Increase in provision		10		-		-	10
Written off and others		-		-		-	-
Others ¹		-		-		-	-
Ending balance	₩	642	₩	-	₩	-	₩ 642

¹ Others include valuation of fair value, foreign currency translation and others.

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30. Loans and Receivables (Financial Business)

(1) Details of loans and receivables as of December 31, 2023 and 2022 are as follows:

(in millions of Korean won)	2023			
	Loan at fair value through profit or loss	Loan at fair value through other comprehensive income	Loan at amortized cost	Total
Loans secured by securities	₩ -	₩ -	₩ 97,400	₩ 97,400
Loans secured by real estate	-	-	9,372,486	9,372,486
Unsecured loan	535,664	-	9,264,932	9,800,596
Loans secured by third-party guarantee	-	-	930,334	930,334
Loans secured by deposit and instalment savings	-	-	269	269
Other loans	37	1,613,146	4,223,133	5,836,316
Subtotal	535,701	1,613,146	23,888,554	26,037,401
Deferred loan origination cost and fee	-	-	21,147	21,147
Present value discount	-	-	(356)	(356)
Provision for impairment	-	(1,053)	(279,237)	(280,290)
Total	₩ 535,701	₩ 1,612,093	₩ 23,630,108	₩ 25,777,902

(in millions of Korean won)	2022			
	Loan at fair value through profit or loss	Loan at fair value through other comprehensive income	Loan at amortized cost	Total
Call loan	₩ -	₩ -	₩ 24	₩ 24
Loans secured by securities	-	-	132,464	132,464
Loans secured by real estate	1,500	-	10,416,656	10,418,156
Unsecured loan	684,094	-	9,136,191	9,820,285
Loans secured by third-party guarantee	-	-	985,329	985,329
Loans secured by deposit and instalment savings	-	-	190	190
Other loans	37	656,081	5,127,393	5,783,511
Subtotal	685,631	656,081	25,798,247	27,139,959
Deferred loan origination cost and fee	-	-	17,253	17,253
Present value discount	-	-	(235)	(235)
Provision for impairment	-	(69)	(159,786)	(159,855)
Total	₩ 685,631	₩ 656,012	₩ 25,655,479	₩ 26,997,122

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(2) Changes in carrying amount of loan receivables at fair value through other comprehensive income before recognizing provision for impairment for each of the two years in the period ended December 31, 2023 are as follows:

(in millions of Korean won)	2023						
	12 months expected credit losses measurement		Lifetime expected credit losses		Credit-impaired financial assets		Total
Beginning balance	₩	656,081	₩	-	₩	-	₩ 656,081
Transfer to 12-month ECLs		-		-		-	-
Transfer to lifetime ECLs		-		-		-	-
Transfer to credit- impaired financial assets		-		-		-	-
Execution(+)		110,271		-		-	110,271
Repayments(-)		(159,815)		-		-	(159,815)
Others ¹		1,006,609		-		-	1,006,609
Ending balance	₩	1,613,146	₩	-	₩	-	₩ 1,613,146

¹ Others include valuation of fair value, foreign currency translation and others.

(in millions of Korean won)	2022						
	12 months expected credit losses measurement		Lifetime expected credit losses		Credit-impaired financial assets		Total
Beginning balance	₩	818,208	₩	-	₩	-	₩ 818,208
Transfer to 12-month ECLs		-		-		-	-
Transfer to lifetime ECLs		-		-		-	-
Transfer to credit- impaired financial assets		-		-		-	-
Execution (+)		72,914		-		-	72,914
Repayments(-)		(109,142)		-		-	(109,142)
Others ¹		(125,899)		-		-	(125,899)
Ending balance	₩	656,081	₩	-	₩	-	₩ 656,081

¹ Others include valuation of fair value, foreign currency translation and others.

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(3) Changes in provision for impairment on loan receivables at fair value through other comprehensive income for each of the two years in the period ended December 31, 2023 are as follows:

(in millions of Korean won)	2023			
	12 months expected credit losses measurement	Lifetime expected credit losses	Credit-impaired financial assets	Total
Beginning balance	₩ 69	₩ -	₩ -	₩ 69
Transfer to 12-month ECLs	-	-	-	-
Transfer to lifetime ECLs	-	-	-	-
Transfer to credit- impaired financial assets	-	-	-	-
Reversal	(214)	-	-	(214)
Written off and others	-	-	-	-
Others ¹	1,198	-	-	1,198
Ending balance	₩ 1,053	₩ -	₩ -	₩ 1,053

¹ Others include unwinding effect, recovery of impairment loss, exchange rate fluctuations and others.

(in millions of Korean won)	2022			
	12 months expected credit losses measurement	Lifetime expected credit losses	Credit-impaired financial assets	Total
Beginning balance	₩ 109	₩ -	₩ -	₩ 109
Transfer to 12-month ECLs	-	-	-	-
Transfer to lifetime ECLs	-	-	-	-
Transfer to credit- impaired financial assets	-	-	-	-
Reversal	(40)	-	-	(40)
Written off and others	-	-	-	-
Others ¹	-	-	-	-
Ending balance	₩ 69	₩ -	₩ -	₩ 69

¹ Others include unwinding effect, recovery of impairment loss, exchange rate fluctuations and others.

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(4) Changes in carrying amount of loan receivables at amortized cost before recognizing provision for impairment for each of the two years in the period ended December 31, 2023 are as follows:

(in millions of Korean won)	2023				
	12 months expected credit losses measurement		Lifetime expected credit losses		Credit-impaired financial assets
					Total
Beginning balance	₩	25,027,415	₩	600,909	₩ 169,923 ₩ 25,798,247
Transfer to 12-month ECLs		174,774		(173,759)	(1,015) -
Transfer to lifetime ECLs		(842,455)		843,125	(670) -
Transfer to credit-impaired financial assets		(133,128)		(37,114)	170,242 -
Exercise(+)		488,813		73,662	19,704 582,179
Repayments(-)		(1,086,247)		(190,707)	(34,208) (1,311,162)
Others ¹		(1,322,114)		145,604	(4,200) (1,180,710)
Ending balance	₩	22,307,058	₩	1,261,720	₩ 319,776 ₩ 23,888,554

¹ Others include valuation of fair value, foreign currency translation and others.

(in millions of Korean won)	2022				
	12 months expected credit losses measurement		Lifetime expected credit losses		Credit-impaired financial assets
					Total
Beginning balance	₩	23,260,118	₩	924,866	₩ 142,383 ₩ 24,327,367
Transfer to 12-month ECLs		482,922		(482,461)	(461) -
Transfer to lifetime ECLs		(313,481)		315,479	(1,998) -
Transfer to credit-impaired financial assets		(62,600)		(20,314)	82,914 -
Exercise(+)		4,650,197		64,672	12,526 4,727,395
Repayments(-)		(3,016,792)		(201,918)	(32,561) (3,251,271)
Others ¹		27,051		585	(32,880) (5,244)
Ending balance	₩	25,027,415	₩	600,909	₩ 169,923 ₩ 25,798,247

¹ Others include valuation of fair value, foreign currency translation and others.

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(5) Changes in provision for impairment on loan receivables at amortized cost for each of the two years in the period ended December 31, 2023 are as follows:

(in millions of Korean won)	2023							
	12 months expected credit losses measurement		Lifetime expected credit losses		Credit-impaired financial assets	Total		
Beginning balance	₩	74,616	₩	17,382	₩	67,788	₩	159,786
Transfer to 12-month ECLs		8,845		(8,220)		(625)		-
Transfer to lifetime ECLs		(5,766)		6,886		(1,120)		-
Transfer to credit- impaired financial assets		(645)		(3,155)		3,800		-
Increase in provision (Reversal)		(14,527)		36,288		112,318		134,079
Written off and others		1,349		3,047		(33,161)		(28,765)
Others ¹		16,975		(1,416)		(1,422)		14,137
Ending balance	₩	80,847	₩	50,812	₩	147,578	₩	279,237

¹ Others include unwinding effect, recovery of impairment loss, exchange rate fluctuations and others.

(in millions of Korean won)	2022					
	12 months expected credit losses measurement		Lifetime expected credit losses		Credit-impaired financial assets	Total
Beginning balance	₩	73,352	₩	22,292	₩ 51,502	₩ 147,146
Transfer to 12-month ECLs		8,748		(8,705)	(43)	-
Transfer to lifetime ECLs		(3,074)		3,663	(589)	-
Transfer to credit- impaired financial assets		(2,980)		(1,493)	4,473	-
Increase in provision (Reversal)		(1,880)		2,955	28,454	29,529
Written off and others		(1,444)		1,324	(31,852)	(31,972)
Others ¹		1,894		(2,654)	15,843	15,083
Ending balance	₩	74,616	₩	17,382	₩ 67,788	₩ 159,786

¹ Others include unwinding effect, recovery of impairment loss, exchange rate fluctuations and others.

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31. Other Financial Assets (Financial Business)

(1) Details of other financial assets as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>	2023		2022	
Other accounts receivable	₩	1,153,658	₩	880,725
Accrued income		1,353,950		1,238,984
Deposit received for guarantee		151,051		139,655
Others		10,755		9,047
Present value discount		(11,192)		(8,208)
Provision for impairment		(109,016)		(97,596)
Total	₩	<u>2,549,206</u>	₩	<u>2,162,607</u>

(2) Changes in provision for impairment on other financial assets for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>	2023		2022	
Beginning	₩	97,596	₩	98,447
Increase in provision		2,955		834
Written off and others		28		(3,141)
Others ¹		8,437		1,456
Ending	₩	<u>109,016</u>	₩	<u>97,596</u>

¹ Others include unwinding effect and recovery of impairment loss.

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32. Derivative Financial Instruments (Financial Business)

(1) Details of derivative financial instruments as of December 31, 2023 and 2022 are as follows:

(in millions of Korean won)

	2023							
	Trading				Hedging			
	Assets		Liabilities		Assets		Liabilities	
Currency								
Currency forward ¹	₩	73,515	₩	34,213	₩	116,513	₩	56,032
Currency swap ¹		113,197		135,855		51,875		210,595
Stock index								
Stock index option		111		1,946		-		-
Credit								
Credit derivative		134,322		150,517		-		-
Derivatives-combined securities								
Stock warrants and conversion rights		244		-		-		-
Interest rate								
Interest rate swap ¹		25,054		44,008		-		18,745
Others								
Option and swap ¹		94,591		260,742		245,544		480,251
Total	₩	441,034	₩	627,281	₩	413,932	₩	765,623

¹ The Group has entered into derivative contracts to hedge the exposure to fluctuations in receivables' future fair value and cash flows. The maximum exposure period is March 15, 2039.

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	2022							
	Trading				Hedging			
	Assets		Liabilities		Assets		Liabilities	
Currency								
Currency forward ¹	₩	186,981	₩	-	₩	247,002	₩	168,235
Currency swap ¹		67,551		59,669		182,292		332,270
Stock index								
Stock index option		13,141		5,356		-		-
Credit								
Credit derivative		16,384		3,155		-		-
Derivatives-combined securities								
Stock warrants and conversion rights		627		-		-		-
Interest rate								
Interest rate swap ¹		57,856		86,580		-		27,803
Others								
Option and swap ¹		231,592		370,106		3,892		1,253,746
Total	₩	574,132	₩	524,866	₩	433,186	₩	1,782,054

¹ The Group has entered into currency swap contracts to hedge the exposure to fluctuations in foreign currency receivables' future fair value and cash flows. The maximum exposure period is March 15, 2039.

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(2) Details of gains and losses on derivative financial instruments for each of the two years in the period ended December 31, 2023 are as follows:

(in millions of Korean won)

	2023		2022	
	Trading	Hedging	Trading	Hedging
Currency				
Currency forward	₩ (38,665)	₩ (160,816)	₩ 110,061	₩ (188,131)
Currency swap	(180)	(450,634)	-	(1,078,523)
Stock index				
Stock index option	13,068	-	(13,063)	-
Credit				
Credit derivative	41,685	-	12,164	-
Derivatives-combined securities				
Stock warrants and conversion rights	98	-	1,901	-
Total	₩ 16,006	₩ (611,450)	₩ 111,063	₩ (1,266,654)

(3) The securities are provided as collateral for derivative instrument transactions of the Group (Note 56).

33. Other Assets (Financial Business)

(1) Details of other assets as of December 31, 2023 and 2022 are as follows:

(in millions of Korean won)

	2023	2022
Prepaid expenses	₩ 105,010	₩ 31,928
Prepaid VAT	157	487
Advance payments	106,210	98,172
Lease receivable	219	-
Others	94,496	13,021
Total	₩ 306,092	₩ 143,608

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34. Property, Plant and Equipment, Investment Property and Intangible Assets (Financial Business)

(1) Details of property, plant and equipment, investment property and intangible assets as of December 31, 2023 and 2022 are as follows:

(in millions of Korean won)

		2023			
		Acquisition cost	Accumulated depreciation/amortization	Accumulated impairment losses	Book amount
Property, plant and equipment	Land	₩ 2,195,899	₩ -	₩ (1,138)	₩ 2,194,761
	Buildings	1,660,022	(665,336)	(13,978)	980,708
	Structures	96	(84)	-	12
	Vehicles	2,765	(1,821)	-	944
	Tools and equipment	515,087	(408,688)	-	106,399
	Others	81,650	(48,764)	(9,332)	23,554
	Construction in progress	40,540	-	-	40,540
	Subtotal	4,496,059	(1,124,693)	(24,448)	3,346,918
Investment property	Land	1,147,751	-	-	1,147,751
	Buildings	377,011	-	-	377,011
	Subtotal	1,524,762	-	-	1,524,762
Intangible assets	Goodwill	474,258	-	(111,535)	362,723
	Development costs	514,789	(358,232)	-	156,557
	Membership	21,829	-	-	21,829
	Others	519,884	(303,818)	(14,328)	201,738
	Subtotal	1,530,760	(662,050)	(125,863)	742,847
	Total	₩ 7,551,581	₩ (1,786,743)	₩ (150,311)	₩ 5,614,527

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(in millions of Korean won)

		2022			
		Acquisition cost	Accumulated depreciation/ amortization	Accumulated impairment losses	Book amount
Property, plant and equipment	Land	₩ 2,148,571	₩ -	₩ (1,238)	₩ 2,147,333
	Buildings	1,648,984	(607,770)	(14,255)	1,026,959
	Structures	589	(349)	(54)	186
	Vehicles	904	(900)	-	4
	Tools and equipment	481,990	(375,246)	-	106,744
	Others	70,237	(38,584)	(9,331)	22,322
	Construction in progress	21,171	-	-	21,171
Subtotal		4,372,446	(1,022,849)	(24,878)	3,324,719
Investment property	Land	1,331,480	-	-	1,331,480
	Buildings	409,139	-	-	409,139
Subtotal		1,740,619	-	-	1,740,619
Intangible assets	Goodwill	279,766	-	(111,535)	168,231
	Development costs	452,029	(314,420)	-	137,609
	Membership	28,864	-	-	28,864
	Others	391,887	(288,720)	(14,328)	88,839
Subtotal		1,152,546	(603,140)	(125,863)	423,543
Total		₩ 7,265,611	₩ (1,625,989)	₩ (150,741)	₩ 5,488,881

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(2) Changes in property, plant and equipment, investment property and intangible assets for each of the two years in the period ended December 31, 2023 are as follows:

(in millions of
Korean won)

Korean won)		2023														
		Beginning		Acquisitions		Disposals		Transfer		Depreciation and amortization		Valuation of fair value		Others ¹		Ending
Property, plant and equipment																
Land	₩	2,147,333	₩	-	₩	(1,117)	₩	47,764	₩	-	₩	-	₩	781	₩	2,194,761
Buildings		1,026,959		-		(5,573)		(20,363)		(45,346)		-		25,031		980,708
Structures		186		-		-		-		(2)		-		(172)		12
Vehicles		4		-		(1)		-		(945)		-		1,886		944
Tools and equipment		106,744		44,251		(1,732)		2,663		(52,031)		-		6,504		106,399
Others		22,322		5,119		(641)		404		(7,088)		-		3,438		23,554
Construction in progress		21,171		19,589		(76)		(153)		-		-		9		40,540
Subtotal		3,324,719		68,959		(9,140)		30,315		(105,412)		-		37,477		3,346,918
Investment property																
Land		1,331,480		97		(138,670)		(48,030)		-		(4,526)		7,400		1,147,751
Buildings		409,139		130		(27,377)		14,474		-		(20,156)		801		377,011
Subtotal		1,740,619		227		(166,047)		(33,556)		-		(24,682)		8,201		1,524,762
Intangible assets																
Goodwill		168,231		-		-		-		-		-		194,492		362,723
Development costs		137,609		55,251		(236)		9,818		(41,020)		-		(4,865)		156,557
Membership		28,864		-		(120)		3,129		(3)		-		(10,041)		21,829
Others		88,839		40,328		(2)		(3,623)		(28,335)		-		104,531		201,738
Subtotal		423,543		95,579		(358)		9,324		(69,358)		-		284,117		742,847
Total	₩	5,488,881	₩	164,765	₩	(175,545)	₩	6,083	₩	(174,770)	₩	(24,682)	₩	329,795	₩	5,614,527

¹ Others include changes in scope of consolidation, the effect of changes in exchange rate and change in transfer.

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Korean won)

Korean won)		2022															
		Beginning		Acquisitions		Disposals		Transfer		Depreciation and amortization		Valuation of fair value		Others ¹		Ending	
Property, plant and equipment																	
Land	₩	1,432,843	₩	732	₩	(48,940)	₩	(279,794)	₩	-	₩	938,632	₩	103,860	₩	2,147,333	
Buildings		1,268,136		486		(55,529)		(135,157)		(26,189)		-		(24,788)		1,026,959	
Structures		200		-		-		-		(3)		-		(11)		186	
Vehicles		16		-		-		-		(12)		-		-		4	
Tools and equipment		94,830		33,291		(268)		7,170		(44,845)		-		16,566		106,744	
Others		17,187		1,308		(127)		1,063		(6,133)		-		9,024		22,322	
Construction in progress		1,563		5		-		16,528		-		-		3,075		21,171	
Subtotal		2,814,775		35,822		(104,864)		(390,190)		(77,182)		938,632		107,726		3,324,719	
Investment property																	
Land		1,336,400		9,778		(132,117)		7,871		-		214,344		(104,796)		1,331,480	
Buildings		534,496		962		(62,717)		(3,963)		-		(28,932)		(30,707)		409,139	
Subtotal		1,870,896		10,740		(194,834)		3,908		-		185,412		(135,503)		1,740,619	
Intangible assets																	
Goodwill		186,127		-		-		-		-		-		(17,896)		168,231	
Development costs		124,374		33,537		-		10,132		(27,444)		-		(2,990)		137,609	
Membership		19,063		1,101		(6,604)		-		(3)		-		15,307		28,864	
Others		91,403		28,109		(520)		1,552		(33,852)		-		2,147		88,839	
Subtotal		420,967		62,747		(7,124)		11,684		(61,299)		-		(3,432)		423,543	
Total	₩	5,106,638	₩	109,309	₩	(306,822)	₩	(374,598)	₩	(138,481)	₩	1,124,044	₩	(31,209)	₩	5,488,881	

¹ Others include changes in scope of consolidation, the effect of changes in exchange rate and change in transfer.

Certain property, plant and equipment, intangible asset and investment property are provided as collateral for borrowings as of December 31, 2023 (Note 56).

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(3) Rental income and maintenance expenses from investment property for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>	2023		2022	
Rental income	₩	2,114	₩	13,773
Maintenance expenses		(1,179)		(4,614)

(4) Application of revaluation method in property, plant and equipment

During the year ended December 31, 2023, the Group revalued land through an external valuation firm. (Evaluation date: October 31, 2023) For fair value evaluation, land and buildings were evaluated collectively, and the evaluation amount of the target land was calculated according to the distribution ratio. The valuation method was determined by applying the officially assessed land price method and reviewing the final amount by comparing the trial price calculated by the sales comparison approach and reviewing the rationality. The book value of land using revaluation model and historical cost model as of December 31, 2023, is as follows:

<i>(in millions of Korean won)</i>	Revaluation model		Cost model	
Land	₩	2,194,761	₩	1,256,129

Meanwhile, due to the above land revaluation, the gain on revaluation recognized for the year ended December 31, 2023 is ₩ 938,632 million (before tax).

(5) Application of the fair value model

Land of property, plant and equipment and investment property are subsequently measured at fair value. The fair value of land of property, plant and equipment and investment property was determined based on the value measured by an independent appraisal agency that has experience in appraising real estate similar to the investment property subject to evaluation and has professional qualifications. In accordance with Articles 14, 15 and 16 of the 'Rules on Appraisal and Evaluation', the officially assessed land price method, sales comparison approach, and cost method were applied to the land and buildings subject to appraisal. Fair value hierarchy classifications of property, plant and equipment and investment property that are measured at fair value as of December 31, 2023 and 2022, are as follows:

<i>(in millions of Korean won)</i>	2023			
	Level 1	Level 2	Level 3	Total
Land of property, plant and equipment	₩ -	₩ -	₩ 2,194,761	₩ 2,194,761
Land of investment property	-	-	1,147,751	1,147,751
Buildings of investment property	-	-	377,011	377,011
Total	₩ -	₩ -	₩ 3,719,523	₩ 3,719,523

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	2022			
	Level 1	Level 2	Level 3	Total
Land of property, plant and equipment	₩ -	₩ -	₩ 2,147,333	₩ 2,147,333
Land of investment property	-	-	1,331,480	1,331,480
Buildings of investment property	-	-	409,139	409,139
Total	₩ -	₩ -	₩ 3,887,952	₩ 3,887,952

35. Leases (Financial Business)

(1) Changes in right-of-use assets for each of the two years in the period ended December 31, 2023 are as follows:

(in millions of Korean won)

	2023				
	Buildings	Vehicles	Tools and equipment	Leased facilities	Total
Beginning balance	₩ 23,486	₩ 3,145	₩ 2,294	₩ 213,747	₩ 242,672
Acquisitions	25,455	4,292	623	179,210	209,580
Disposals	(3,320)	(980)	(33)	(129,923)	(134,256)
Depreciation	(9,316)	(1,873)	(598)	(64,985)	(76,772)
Others ¹	(14,691)	678	3	60,136	46,126
Ending balance	₩ 21,614	₩ 5,262	₩ 2,289	₩ 258,185	₩ 287,350

¹ Others include changes in scope of consolidation and the effect of changes in exchange rate.

(in millions of Korean won)

	2022				
	Buildings	Vehicles	Tools and equipment	Leased facilities	Total
Beginning balance	₩ 16,344	₩ 1,842	₩ 410	₩ 86,471	₩ 105,067
Acquisitions	22,521	3,381	7,579	288,508	321,989
Disposals	(6,306)	(889)	(3,237)	(94,291)	(104,723)
Depreciation	(10,381)	(1,189)	(2,458)	(55,097)	(69,125)
Others ¹	1,308	-	-	(11,844)	(10,536)
Ending balance	₩ 23,486	₩ 3,145	₩ 2,294	₩ 213,747	₩ 242,672

¹ Others include changes in scope of consolidation and the effect of changes in exchange rate.

(2) Details of lease liabilities as of December 31, 2023 and 2022 are as follows:

(in millions of Korean won)

	2023	2022
Financial liabilities	₩ 279,784	₩ 241,802

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- (3) The consolidated statements of comprehensive income shows the following amounts relating to leases:

<i>(in millions of Korean won)</i>		2023		2022
Depreciation of right-of-use assets	₩	76,772	₩	69,125
Interest expense relating to lease liabilities		8,061		2,733
Expense relating to short-term leases		881		671
Expense relating to leases of low-value assets		2,373		970
Expense relating to variable lease payments not included in lease liabilities		-		843
Income from subleasing right-of-use assets		38		9
The total cash outflow for leases		96,168		66,706

36. Insurance Contract Liabilities (Financial Business)

- (1) The assumptions and basis for the current estimates of future cash flows applied by the Group for contracts held as of December 31, 2023 and 2022 are as follows:

		Applied assumptions	
		As of December 31, 2023	As of December 31, 2022
Lapse ratio		0.5 ~ 95.5	0.7 ~ 76.0
Payout ratio		2 ~ 5,321	1 ~ 4,671
Business expense rates		-	-
Discount rate	risk-free rate	3.75 ~ 4.8	2.52 ~ 5.05
	scenario	(-)3.16 ~ 20.56	(-)3.47 ~ 20.90
Confidence level for risk adjustment of non-financial risks		75	75

Description	Basis
Lapse ratio	Based on the recent 5-year experience statistics of the Group, cancellation and effective premium ratio relative to the sum assured by product type, payment status, duration, channel, interest rate level, and payment period (term/guaranteed/CI product type) are calculated. the ratio of expected payments to payment claims calculated by collateral, gender, and elapsed years based on the recent 5-year experience statistics is derived.
Payout ratio	※ Payment claims use statistics from the past 5 years based on the incurred claim date and reflect the progression rate of unreported loss amounts.
Business expense rates	Operating basis and actual business expense expenditures are classified and allocated by attribute, and unit cost assumptions are calculated based on total converted monthly new/in-force policy counts, premiums,

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		reserves, etc.
		Statistical Period (as of June 2023): Commissions, general business expenses, taxes and duties based on the previous year, investment management expenses based on the past 3 years.
	risk-free rate	Adjusted risk-free rate term structure (incorporating long-term forward rates and liquidity premiums).
Discount rate	scenario	Adjusted risk-free rate term structure (incorporating long-term forward rates and liquidity premiums) involves estimating parameters consistent with assets traded in the market and applying them to 1,000 interest rate scenarios.
Confidence level for risk adjustment of non-financial risks		Assuming the probability distribution of the present value of future cash flows at each reporting date follows a normal distribution, risk adjustment is calculated as the portion exceeding the 75th percentile of the probability-weighted average of the present value of future cash flows.

(2) Details of insurance contract liabilities issued by portfolio, as well as the reinsurance contract assets held, as of December 31, 2023 and 2022, are as follows:

- 2023
- Life insurance

<i>(in millions of Korean won)</i>	Death	Health	Pension Savings	Variable Insurance	Overseas	Others	Subtotal
Insurance contract assets	₩ -	₩ -	₩ -	₩ -	₩ -	₩ -	-
Insurance contract liabilities	16,408,435	10,755,301	46,122,678	15,343,091	585,741	47,924	89,263,170
Net insurance contract liabilities	16,408,435	10,755,301	46,122,678	15,343,091	585,741	47,924	89,263,170
Reinsurance contract assets	1	148,854	-	-	31,711	-	180,566
Reinsurance contract liabilities	19,987	-	-	-	25,552	7,320	52,859
Net reinsurance contract assets	(19,986)	148,854	-	-	6,159	(7,320)	127,707
Investment contract liabilities	-	-	-	-	-	8,548,711	8,548,711

- Non-life insurance

<i>(in millions of Korean won)</i>	Long-term	General	Automobile	Overseas	Subtotal
Insurance contract assets	₩ 16	₩ -	₩ -	₩ 25	₩ 41
Insurance contract liabilities	12,272,725	580,309	738,238	116,217	13,707,489
Net insurance contract liabilities	12,272,709	580,309	738,238	116,192	13,707,448
Reinsurance contract assets	95,336	292,739	75,342	79,316	542,733
Reinsurance contract liabilities	-	-	19	291	310
Net reinsurance contract assets	95,336	292,739	75,323	79,025	542,423
Investment contract liabilities	-	-	-	-	-

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- Total

(in millions
of Korean won)

	Total
Insurance contract assets	₩ 41
Insurance contract liabilities	102,970,659
Net insurance contract liabilities	102,970,618
Reinsurance contract assets	723,299
Reinsurance contract liabilities	53,169
Net reinsurance contract assets	670,130
Investment contract liabilities	8,548,711

- 2022

- Life insurance

(in millions
of Korean won)

	Death	Health	Pension Savings	Variable Insurance	Overseas	Others	Subtotal
Insurance contract assets	₩ -	₩ -	₩ -	₩ -	₩ -	₩ -	-
Insurance contract liabilities	14,324,050	10,816,147	45,367,778	14,298,164	386,583	50,400	85,243,122
Net insurance contract liabilities	14,324,050	10,816,147	45,367,778	14,298,164	386,583	50,400	85,243,122
Reinsurance contract assets	-	33,481	-	-	6,576	-	40,057
Reinsurance contract liabilities	19,036	-	-	-	3,774	-	22,810
Net reinsurance contract assets	(19,036)	33,481	-	-	2,802	-	17,247
Investment contract liabilities	-	-	-	-	-	7,994,324	7,994,324

- Non-life insurance

(in millions
of Korean won)

	Long-term	General	Automobile	Subtotal
Insurance contract assets	₩ 16	₩ 10,355	₩ -	₩ 10,371
Insurance contract liabilities	10,887,152	490,670	740,270	12,118,092
Net insurance contract liabilities	10,887,136	480,315	740,270	12,107,721
Reinsurance contract assets	354,501	285,070	143,745	783,316
Reinsurance contract liabilities	7,601	2,317	-	9,918
Net reinsurance contract assets	346,900	282,753	143,745	773,398
Investment contract liabilities	-	-	-	-

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- Total

<i>(in millions of Korean won)</i>	Total
Insurance contract assets	₩ 10,371
Insurance contract liabilities	97,361,214
Net insurance contract liabilities	97,350,843
Reinsurance contract assets	823,373
Reinsurance contract liabilities	32,728
Net reinsurance contract assets	790,645
Investment contract liabilities	7,994,324

(3) Changes in remaining coverage liability and incurred claim liability of insurance contract liabilities (assets) where the premium allocation approach was not applied for each of the two years in the period ended December 31, 2023 are as follows:

- 2023

<i>(in millions of Korean won)</i>	Remaining coverage liability		Incurred claim liability	Total
	Remaining coverage excluding loss component	Remaining coverage including loss component		
1. Beginning Net Insurance Contract Liability	₩ 91,453,588	₩ 535,197	₩ 4,159,208	₩ 96,147,993
(1) Beginning Insurance Contract Asset	5,364	-	(59)	5,305
(2) Beginning Insurance Contract Liability	91,458,952	535,197	4,159,149	96,153,298
2. Insurance Service Results	(18,034,865)	216,063	16,832,281	(986,521)
(1) Insurance Revenue	(7,968,995)	-	25,714	(7,943,281)
(2) Insurance Service Expenses	718,721	216,063	6,021,976	6,956,760
1) Insurance Claims and Service Expenses	51,695	(48,126)	5,504,416	5,507,985
2) Cash Flow from Insurance Acquisition	995,741	-	-	995,741
3) Changes in Fulfilment cash flow from Incurred claim	(140,725)	-	256,251	115,526
4) Losses and Recoveries from Loss-Absorbing Contracts	(49,767)	264,189	-	214,422
5) Other Insurance Service Expenses	(138,223)	-	261,309	123,086
(3) Investment Element	(10,784,591)	-	10,784,591	-
3. Insurance Financial Income	9,818,271	30,979	129,193	9,978,443
4. Cash Flow	13,534,852	-	(16,710,826)	(3,175,974)
(1) Premiums Received	16,803,635	-	-	16,803,635
(2) Cash Flow from Insurance Acquisition	(3,210,322)	-	-	(3,210,322)

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(3) Payments of Insurance Claims and Other Insurance Service Expenses	(9,458)	-	(16,480,383)	(16,489,841)
(4) Other Cash Flows	(49,003)	-	(230,443)	(279,446)
5. Others	133,427	(40,921)	(455,383)	(362,877)
6. Ending Net Insurance Contract Liability	96,905,273	741,318	3,954,473	101,601,064
(1) Ending Insurance Contract Asset	26	-	16	42
(2) Ending Insurance Contract Liability	96,905,299	741,318	3,954,489	101,601,106

- 2022

(in millions of Korean won)	Remaining coverage liability		Incurred claim liability	Total
	Remaining coverage excluding loss component	Remaining coverage including loss component		
1. Beginning Net Insurance Contract Liability	₩ 104,816,038	₩ 212,923	₩ 3,929,923	₩ 108,958,884
(1) Beginning Insurance Contract Asset	-	-	16	16
(2) Beginning Insurance Contract Liability	104,816,038	212,923	3,929,939	108,958,900
2. Insurance Service Results	(20,852,231)	326,656	19,228,064	(1,297,511)
(1) Insurance Revenue	(7,515,687)	-	-	(7,515,687)
(2) Insurance Service Expenses	548,433	326,656	5,343,087	6,218,176
1) Insurance Claims and Service Expenses	69,516	(12,980)	4,825,975	4,882,511
2) Cash Flow from Insurance Acquisition	695,953	-	-	695,953
3) Changes in Fulfilment cash flow from Incurred claim	(107,064)	-	272,097	165,033
4) Losses and Recoveries from Loss-Absorbing Contracts	(12,979)	339,636	-	326,657
5) Other Insurance Service Expenses	(96,993)	-	245,015	148,022
(3) Investment Element	(13,884,977)	-	13,884,977	-
3. Insurance Financial Income	(11,093,610)	(3,573)	112,588	(10,984,595)
4. Cash Flow	18,481,959	-	(18,940,898)	(458,939)
(1) Premiums Received	20,539,283	-	-	20,539,283
(2) Cash Flow from Insurance Acquisition	(2,073,261)	-	-	(2,073,261)
(3) Payments of Insurance Claims and Other Insurance Service Expenses	(5,407)	-	(18,741,715)	(18,747,122)
(4) Other Cash Flows	21,344	-	(199,183)	(177,839)
5. Others	100,930	(307)	(170,469)	(69,846)
6. Ending Net Insurance Contract Liability	91,453,086	535,699	4,159,208	96,147,993
(1) Ending Insurance Contract Asset	5,364	-	(59)	5,305
(2) Ending Insurance Contract Liability	91,458,450	535,699	4,159,149	96,153,298

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(4) Changes in remaining coverage liability and incurred claim liability of insurance contract liabilities (assets) applying the premium allocation approach for each of the two years in the period ended December 31, 2023 are as follows:

- 2023

(in millions of Korean won)	Remaining coverage liability		Incurred claim liability		Total
	Remaining coverage excluding loss component	Remaining coverage including loss component	Present value estimate of future cash flows	Risk adjustment for non-financial risk	
1. Beginning Net Insurance Contract Liability	₩ 660,247	₩ 33,186	₩ 460,411	₩ 49,008	₩ 1,202,852
(1) Beginning Insurance Contract Asset	(28,574)	(1)	34,671	(1,031)	5,065
(2) Beginning Insurance Contract Liability	631,673	33,185	495,082	47,977	1,207,917
2. Insurance Service Results	(1,641,310)	(22,075)	1,613,680	(240)	(49,945)
(1) Insurance Revenue	(1,850,178)	-	-	-	(1,850,178)
(2) Insurance Service Expenses	208,868	(22,075)	1,613,680	(240)	1,800,233
1) Insurance Claims and Service Expenses	12,155	-	1,341,962	70,995	1,425,112
2) Cash Flow from Insurance Acquisition	196,713	-	-	-	196,713
3) Changes in Fulfilment cash flow	-	-	121,068	(71,235)	49,833
from Incurred claim					
4) Losses and Recoveries from Loss-Absorbing Contracts	-	(22,075)	-	-	(22,075)
5) Other Insurance Service Expenses	-	-	150,650	-	150,650
3. Insurance Financial Income	8,618	-	21,611	-	30,229
4. Cash Flow	1,646,640	-	(1,564,861)	-	81,779
(1) Premiums Received	1,858,423	-	-	-	1,858,423
(2) Cash Flow from Insurance Acquisition	(214,071)	-	-	-	(214,071)
(3) Payments of Insurance Claims and Other Insurance Service Expenses	-	-	(1,476,690)	-	(1,476,690)
(4) Other Cash Flows	2,288	-	(88,171)	-	(85,883)
5. Others	(98)	823	88,187	15,726	104,638
6. Ending Net Insurance Contract Liability	674,097	11,934	619,028	64,494	1,369,553
(1) Ending Insurance Contract Asset	-	-	-	-	-
(2) Ending Insurance Contract Liability	674,097	11,934	619,028	64,494	1,369,553

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- 2022

(in millions of Korean won)	Remaining coverage liability		Incurred claim liability		Total
	Remaining coverage excluding loss component	Remaining coverage including loss component	Present value estimate of future cash flows	Risk adjustment for non-financial risk	
1. Beginning Net Insurance Contract Liability	₩ 651,358	₩ 28,984	₩ 482,314	₩ 56,104	₩ 1,218,760
(1) Beginning Insurance Contract Asset	-	-	-	-	-
(2) Beginning Insurance Contract Liability	651,358	28,984	482,314	56,104	1,218,760
2. Insurance Service Results	(1,317,514)	4,202	1,218,443	(7,096)	(101,965)
(1) Insurance Revenue	(1,505,485)	-	-	-	(1,505,485)
(2) Insurance Service Expenses	187,971	4,202	1,218,443	(7,096)	1,403,520
1) Insurance Claims and Service Expenses	10,679	-	1,109,140	46,514	1,166,333
2) Cash Flow from Insurance Acquisition	177,292	-	-	-	177,292
3) Changes in Fulfilment cash flow from Incurred claim	-	-	3,648	(53,610)	(49,962)
4) Losses and Recoveries from Loss-Absorbing Contracts	-	4,202	-	-	4,202
5) Other Insurance Service Expenses	-	-	105,655	-	105,655
3. Insurance Financial Income	5,876	-	2,251	-	8,127
4. Cash Flow	1,312,432	-	(1,242,597)	-	69,835
(1) Premiums Received	1,509,725	-	-	-	1,509,725
(2) Cash Flow from Insurance Acquisition	(188,552)	-	-	-	(188,552)
(3) Payments of Insurance Claims and Other Insurance Service Expenses	-	-	(1,158,946)	-	(1,158,946)
(4) Other Cash Flows	(8,741)	-	(83,651)	-	(92,392)
5. Others	8,094	-	-	-	8,094
6. Ending Net Insurance Contract Liability	660,246	33,186	460,411	49,008	1,202,851
(1) Ending Insurance Contract Asset	(28,574)	(1)	34,671	(1,031)	5,065
(2) Ending Insurance Contract Liability	631,672	33,185	495,082	47,977	1,207,916

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Notes to the consolidated financial statements
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(5) Changes in insurance contract liabilities (assets) by component for each of the two years in the period ended December 31, 2023 are as follows:

- 2023

<i>(in millions of Korean won)</i>		Estimates of future cash flows	Risk adjustment for non-financial risk	Contractual Service Margin	Total
1. Beginning Net Insurance Contract Liability	₩	79,902,655	₩ 2,653,961	₩ 13,591,377	₩ 96,147,993
(1) Beginning Insurance Contract Asset		5,305	-	-	5,305
(2) Beginning Insurance Contract Liability		79,907,960	2,653,961	13,591,377	96,153,298
2. Changes related to future services		(474,102)	209,478	479,046	214,422
(1) Variations in estimated adjustments to contractual service margin		2,907,196	(150,185)	(2,757,011)	-
(2) Losses and recoveries from portfolios of loss-absorbing contracts		90,425	3,261	-	93,686
(3) Effects of Beginning recognition of contracts		(3,471,723)	356,402	3,236,057	120,736
3. Changes related to current services		169,525	(196,108)	(1,289,886)	(1,316,469)
(1) Recognition in current period profit or loss of contractual service margin adjusted for service transfer		-	-	(1,289,886)	(1,289,886)
(2) Variations in risk adjustments for non-financial risks		-	(196,142)	-	(196,142)
(3) Experience adjustments		169,525	34	-	169,559
4. Changes related to past services		166,009	(50,482)	-	115,527
(1) Fulfilment cash flow from incurred claims		166,009	(50,482)	-	115,527
5. Insurance Service Results		(138,568)	(37,112)	(810,840)	(986,520)
6. Insurance Financial Income		9,470,953	2,815	504,675	9,978,443
7. Cash Flow		(3,175,974)	-	-	(3,175,974)
(1) Premiums Received		16,803,635	-	-	16,803,635
(2) Cash Flow from Insurance Acquisition		(3,210,322)	-	-	(3,210,322)
(3) Payments of Insurance Claims and Other Insurance Service Expenses		(16,489,842)	-	-	(16,489,842)
(4) Other Cash Flows		(279,445)	-	-	(279,445)
8. Others		(374,254)	(235)	11,611	(362,878)
9. Ending Net Insurance Contract Liability		85,684,812	2,619,429	13,296,823	101,601,064
(1) Ending Insurance Contract Asset		42	-	-	42
(2) Ending Insurance Contract Liability		85,684,854	2,619,429	13,296,823	101,601,106

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- 2022

<i>(in millions of Korean won)</i>		Estimates of future cash flows	Risk adjustment for non-financial risk	Contractual Service Margin	Total
	₩		₩	₩	₩
1. Beginning Net Insurance Contract Liability		95,286,306	2,854,809	10,817,770	108,958,885
(1) Beginning Insurance Contract Asset		15	-	-	15
(2) Beginning Insurance Contract Liability		95,286,321	2,854,809	10,817,770	108,958,900
2. Changes related to future services		(5,601,224)	128,920	5,798,961	326,657
(1) Variations in estimated adjustments to contractual service margin		(3,534,357)	(140,270)	3,674,627	-
(2) Losses and recoveries from portfolios of loss-absorbing contracts		62,603	6,283	-	68,886
(3) Effects of Beginning recognition of contracts		(2,129,470)	262,907	2,124,334	257,771
3. Changes related to current services		(258,549)	(325,299)	(1,205,352)	(1,789,200)
(1) Recognition in current period profit or loss of contractual service margin adjusted for service transfer		-	-	(1,205,352)	(1,205,352)
(2) Variations in risk adjustments for non-financial risks		-	(325,299)	-	(325,299)
(3) Experience adjustments		(258,549)	-	-	(258,549)
4. Changes related to past services		224,103	(59,071)	-	165,032
(1) Fulfilment cash flow from incurred claims		224,103	(59,071)	-	165,032
5. Insurance Service Results		(5,635,670)	(255,450)	4,593,609	(1,297,511)
6. Insurance Financial Income		(9,164,593)	-	(1,820,002)	(10,984,595)
7. Cash Flow		(458,940)	-	-	(458,940)
(1) Premiums Received		20,539,283	-	-	20,539,283
(2) Cash Flow from Insurance Acquisition		(2,073,261)	-	-	(2,073,261)
(3) Payments of Insurance Claims and Other Insurance Service Expenses		(18,747,122)	-	-	(18,747,122)
(4) Other Cash Flows		(177,840)	-	-	(177,840)
8. Others		(69,846)	-	-	(69,846)
9. Ending Net Insurance Contract Liability		79,957,257	2,599,359	13,591,377	96,147,993
(1) Ending Insurance Contract Asset		5,305	-	-	5,305
(2) Ending Insurance Contract Liability		79,962,562	2,599,359	13,591,377	96,153,298

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(6) Changes in reinsurance contract assets held for remaining coverage and incurred claim where the premium allocation approach was not applied for each of the two years in the period ended December 31, 2023 are as follows:

- 2023

(in millions of Korean won)	Remaining coverage asset		Incurred claim asset	Total
	Remaining coverage excluding loss recovery component	Remaining coverage including loss recovery component		
1. Beginning Net Reinsurance Contract Assets	₩ (88,653)	₩ 2,850	₩ 445,745	₩ 359,942
(1) Beginning Reinsurance Contract Asset	1,454	2,850	386,050	390,354
(2) Beginning Reinsurance Contract Liability	90,107	-	(59,695)	30,412
2. Allocation of Reinsurance Premiums	(273,741)	-	-	(273,741)
3. Recoverable Amount from Reinsurers	-	4,408	275,165	279,573
(1) Insurance Claims and Service Expenses	-	(582)	292,004	291,422
(2) Changes in Fulfilment cash flow from Incurred Claims	-	-	(16,839)	(16,839)
(3) Occurrence and Recovery of Loss Recovery Components	-	4,990	-	4,990
4. Reinsurance Margin (Net Cost)	(273,741)	4,408	275,165	5,832
5. Reinsurance Financial Income	(11,934)	39	4,731	(7,164)
(1) Reinsurance Financial Income	(10,590)	39	4,708	(5,843)
(2) Effects of Exchange Rate Fluctuations	-	-	-	-
(3) Variations in Reinsurer Non-Performance Risk	(1,344)	-	23	(1,321)
6. Investment Element	(37,193)	-	37,193	-
7. Cash Flow	453,413	-	(585,574)	(132,161)
(1) Premiums paid to reinsurers	321,705	-	-	321,705
(2) Amounts recovered from reinsurers	-	-	(447,146)	(447,146)
(3) Other cash flows	131,708	-	(138,428)	(6,720)
8. Others	230	-	(95)	135
9. Ending net reinsurance contract assets	42,122	7,297	177,165	226,584
(1) Ending Reinsurance Contract Asset	98,395	7,297	166,430	272,122
(2) Ending Reinsurance Contract Liability	56,273	-	(10,735)	45,538

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- 2022

(in millions of Korean won)	Remaining coverage asset		Incurred claim asset	Total
	Remaining coverage excluding loss recovery component	Remaining coverage including loss recovery component		
1. Beginning Net Reinsurance Contract Assets	₩ (103,594)	₩ 38,555	₩ 451,385	₩ 386,346
(1) Beginning Reinsurance Contract Asset	(48,141)	38,555	442,283	432,697
(2) Beginning Reinsurance Contract Liability	55,453	-	(9,102)	46,351
2. Allocation of Reinsurance Premiums	(389,400)	-	-	(389,400)
3. Recoverable Amount from Reinsurers	-	(35,583)	339,552	303,969
(1) Insurance Claims and Service Expenses	-	-	388,669	388,669
(2) Changes in Fulfilment cash flow from Incurred Claims	-	-	(49,117)	(49,117)
(3) Occurrence and Recovery of Loss Recovery Components	-	(35,583)	-	(35,583)
4. Reinsurance Margin (Net Cost)	(389,400)	(35,583)	339,552	(85,431)
5. Reinsurance Financial Income	24,456	(123)	1,297	25,630
(1) Reinsurance Financial Income	22,824	(123)	1,303	24,004
(2) Effects of Exchange Rate Fluctuations	-	-	-	-
(3) Variations in Reinsurer Non-Performance Risk	1,632	-	(6)	1,626
6. Investment Element	(671,731)	-	671,731	-
7. Cash Flow	1,053,160	-	(1,018,333)	34,827
(1) Premiums paid to reinsurers	1,039,357	-	-	1,039,357
(2) Amounts recovered from reinsurers	-	-	(1,009,638)	(1,009,638)
(3) Other cash flows	13,803	-	(8,695)	5,108
8. Others	(1,545)	-	113	(1,432)
9. Ending net reinsurance contract assets	(88,654)	2,849	445,745	359,940
(1) Ending Reinsurance Contract Asset	1,454	2,849	386,050	390,353
(2) Ending Reinsurance Contract Liability	90,108	-	(59,695)	30,413

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(7) Changes in reinsurance contract assets held for remaining coverage and incurred claim where the premium allocation approach was applied for each of the two years in the period ended December 31, 2023 are as follows:

- 2023

(in millions of Korean won)	Remaining coverage asset	Incurred claim asset		Total
		Present value estimate of future cash flows	Risk adjustment for non-financial risk	
1. Beginning Net Reinsurance Contract Assets	₩ 32,360	₩ 373,702	₩ 24,640	₩ 430,702
(1) Beginning Reinsurance Contract Asset	35,753	372,781	24,485	433,019
(2) Beginning Reinsurance Contract Liability	3,393	(921)	(155)	2,317
2. Allocation of Reinsurance Premiums	(454,207)	-	-	(454,207)
3. Recoverable Amount from Reinsurers	(7,669)	346,614	517	339,462
(1) Insurance Claims and Service Expenses	-	352,332	19,788	372,120
(2) Fulfilment cash flow from Settlement of Incurred Claims	-	(5,718)	(19,271)	(24,989)
(3) Occurrence and Recovery of Loss Recovery Components	(7,669)	-	-	(7,669)
4. Reinsurance Margin (Net Cost)	(461,876)	346,614	517	(114,745)
5. Reinsurance Financial Income	1,458	4,856	-	6,314
(1) Reinsurance Financial Income	4,137	9,786	-	13,923
(2) Effects of Exchange Rate Fluctuations	(1,891)	78	-	(1,813)
(3) Variations in Reinsurer Non-Performance Risk	(788)	(5,008)	-	(5,796)
6. Investment Element	(9,796)	10,377	-	581
7. Cash Flow	441,621	(416,388)	-	25,233
(1) Premiums paid to reinsurers	441,621	(42,095)	-	399,526
(2) Amounts recovered from reinsurers	-	(374,293)	-	(374,293)
8. Others	2,434	82,920	10,108	95,462
9. Ending net reinsurance contract assets	6,201	402,081	35,265	443,547
(1) Ending Reinsurance Contract Asset	14,331	401,593	35,254	451,178
(2) Ending Reinsurance Contract Liability	8,130	(488)	(11)	7,631

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- 2022

(in millions of Korean won)	Remaining coverage asset	Incurred claim asset		Total
		Present value estimate of future cash flows	Risk adjustment for non-financial risk	
1. Beginning Net Reinsurance Contract Assets	₩ 93,260	₩ 304,653	₩ 29,087	₩ 427,000
(1) Beginning Reinsurance Contract Asset	93,310	304,621	29,087	427,018
(2) Beginning Reinsurance Contract Liability	50	(32)	-	18
2. Allocation of Reinsurance Premiums	(435,396)	-	-	(435,396)
3. Recoverable Amount from Reinsurers	(818)	327,617	(4,447)	322,352
(1) Insurance Claims and Service Expenses	-	416,934	31,016	447,950
(2) Fulfilment cash flow from Settlement of Incurred Claims	-	(89,317)	(35,463)	(124,780)
(3) Occurrence and Recovery of Loss Recovery Components	(818)	-	-	(818)
4. Reinsurance Margin (Net Cost)	(436,214)	327,617	(4,447)	(113,044)
5. Reinsurance Financial Income	2,232	10,142	-	12,374
(1) Reinsurance Financial Income	2,157	1,548	-	3,705
(2) Effects of Exchange Rate Fluctuations	65	152	-	217
(3) Variations in Reinsurer Non-Performance Risk	10	8,442	-	8,452
6. Investment Element	(19,343)	18,264	-	(1,079)
7. Cash Flow	407,264	(314,681)	-	92,583
(1) Premiums paid to reinsurers	407,264	39,004	-	446,268
(2) Amounts recovered from reinsurers	-	(353,685)	-	(353,685)
8. Others	(14,839)	27,707	-	12,868
9. Ending net reinsurance contract assets	32,360	373,702	24,640	430,702
(1) Ending Reinsurance Contract Asset	35,753	372,781	24,485	433,019
(2) Ending Reinsurance Contract Liability	3,393	(921)	(155)	2,317

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(8) Changes in reinsurance contract assets (liabilities) held by component for each of the two years in the period ended December 31, 2023 are as follows:

- 2023

<i>(in millions of Korean won)</i>	Estimates of future cash flows	Risk adjustment for non-financial risk	Contractual Service Margin	Total
1. Beginning Net Reinsurance Contract Asset	₩ 89,877	₩ 72,364	₩ 197,701	₩ 359,942
(1) Beginning Reinsurance Contract Asset	167,416	63,650	159,288	390,354
(2) Beginning Reinsurance Contract Liability	77,539	(8,714)	(38,413)	30,412
2. Changes related to future services	(10,478)	(1,425)	16,894	4,991
(1) Variations in estimated adjustments to contractual service margin	18,235	(5,559)	(12,675)	1
(2) Transfer and recovery of loss recovery components	935	(305)	-	630
(3) Effects of Beginning recognition of contracts	(29,648)	4,439	29,569	4,360
3. Changes related to current services	24,595	(2,042)	(4,873)	17,680
(1) Contractual service margin recognized in the current period profit or loss to reflect service transfer	(2,563)	-	(4,873)	(7,436)
(2) Variations in risk adjustments for non-financial risks	-	(2,042)	-	(2,042)
(3) Experience adjustments	27,158	-	-	27,158
4. Changes related to past services	(14,905)	(1,934)	-	(16,839)
(1) Fulfilment cash flow from the settlement of incurred claims	(14,905)	(1,934)	-	(16,839)
5. Reinsurance Service Results	(788)	(5,401)	12,021	5,832
6. Reinsurance Financial Income	(15,765)	2,124	6,477	(7,164)
(1) Reinsurance financial income	(14,445)	2,124	6,477	(5,844)
(2) Variation effect of reinsurer non-performance risk	(1,320)	-	-	(1,320)
7. Cash Flow	(132,162)	-	-	(132,162)
(1) Paid reinsurance premiums	321,705	-	-	321,705
(2) Amounts recovered from reinsurers	(447,146)	-	-	(447,146)
(3) Other Cash Flows	(6,721)	-	-	(6,721)
8. Others	933	(50)	(747)	136
9. Ending Net Reinsurance Contract Asset	(57,905)	69,037	215,452	226,584
(1) Ending Reinsurance Contract Asset	62,138	62,178	147,806	272,122
(2) Ending Reinsurance Contract Liability	120,043	(6,859)	(67,646)	45,538

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- 2022

<i>(in millions of Korean won)</i>		Estimates of future cash flows	Risk adjustment for non-financial risk	Contractual Service Margin	Total
1. Beginning Net Reinsurance Contract Asset	₩	93,449	₩ 112,697	₩ 180,200	₩ 386,346
(1) Beginning Reinsurance Contract Asset		164,696	101,886	166,115	432,697
(2) Beginning Reinsurance Contract Liability		71,247	(10,811)	(14,085)	46,351
2. Changes related to future services		(60,762)	(25,050)	50,229	(35,583)
(1) Variations in estimated adjustments to contractual service margin		5,720	(29,118)	23,397	(1)
(2) Transfer and recovery of loss recovery components		(40,736)	(7,665)	-	(48,401)
(3) Effects of Beginning recognition of contracts		(25,746)	11,733	26,832	12,819
3. Changes related to current services		43,655	(5,545)	(38,841)	(731)
(1) Contractual service margin recognized in the current period profit or loss to reflect service transfer		-	-	(38,841)	(38,841)
(2) Variations in risk adjustments for non-financial risks		-	(7,399)	-	(7,399)
(3) Experience adjustments		43,655	1,854	-	45,509
4. Changes related to past services		(29,965)	(19,153)	-	(49,118)
(1) Fulfilment cash flow from the settlement of incurred claims		(29,965)	(19,153)	-	(49,118)
5. Reinsurance Service Results		(47,072)	(49,748)	11,388	(85,432)
6. Reinsurance Financial Income		19,517	-	6,113	25,630
(1) Reinsurance financial income		17,891	-	6,113	24,004
(2) Variation effect of reinsurer non-performance risk		1,626	-	-	1,626
7. Cash Flow		34,827	-	-	34,827
(1) Paid reinsurance premiums		1,039,357	-	-	1,039,357
(2) Amounts recovered from reinsurers		(1,009,638)	-	-	(1,009,638)
(3) Other Cash Flows		5,108	-	-	5,108
8. Others		(1,430)	-	-	(1,430)
9. Ending Net Reinsurance Contract Asset		99,291	62,949	197,701	359,941
(1) Ending Reinsurance Contract Asset		176,830	54,236	159,288	390,354
(2) Ending Reinsurance Contract Liability		77,539	(8,713)	(38,413)	30,413

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(9) Details of insurance profit and loss related to insurance contracts for each of the two years in the period ended December 31, 2023 are as follows:

- 2023
- Life Insurance

(in millions
of Korean won)

	Death	Health	Pension Savings	Variable Insurance	Overseas	Others	Subtotal
1. Insurance Revenue							
(1) Contracts without premium allocation approach:							
Estimated insurance claims and expenses	₩ 1,146,944	₩ 1,040,111	₩ 330,339	₩ 451,995	₩ 48,119	₩ -	₩ 3,017,508
Variations in risk adjustments due to risk release	60,831	33,655	7,572	15,723	2,195	-	119,976
Variations in contractual service margin due to service provision	385,917	370,782	77,400	66,919	878	-	901,896
Experience adjustment of premiums for current and past services	-	-	-	-	-	-	-
Recovery of cash flows from insurance acquisitions	447,353	170,454	49,943	9,053	22,419	-	699,222
Other insurance operating income	(62,397)	11,415	(3,731)	(6,622)	13,309	(100)	(48,126)
Subtotal	1,978,648	1,626,417	461,523	537,068	86,920	(100)	4,690,476
(2) Contracts with premium allocation approach:	19,886	-	-	-	-	-	19,886
Total Insurance Revenues	1,998,534	1,626,417	461,523	537,068	86,920	(100)	4,710,362
2. Insurance Service Expenses							
(1) Contracts without premium allocation approach:							
Actual insurance claims and expenses	1,404,267	1,080,828	311,013	457,340	40,261	129	3,293,838
Amortization expenses of cash flows from insurance acquisitions	383,474	170,454	49,943	9,053	22,419	-	635,343
Changes in fulfilment cash flow from incurred claims	76,016	46,393	(9,544)	27,653	4,017	-	144,535
Losses and recoveries from loss-bearing contracts	(47,424)	20,615	177,508	(54,950)	16,180	33	111,962
Other insurance operating expenses	(124,124)	(786)	(6,465)	(6,848)	1,523	-	(136,700)
Subtotal	1,692,209	1,317,504	522,455	432,248	84,400	162	4,048,978
(2) Contracts with premium allocation approach:	28,107	-	-	-	-	-	28,107
Total Insurance Service Expenses	1,720,316	1,317,504	522,455	432,248	84,400	162	4,077,085
3. Reinsurance Revenue							
(1) Contracts without premium allocation approach:							
Recovered amount of incurred reinsurance claims and expenses	44,011	205,700	-	-	3,518	-	253,229
Changes in fulfilment cash flow from incurred reinsurance claims	(1,818)	(13,689)	-	-	43	-	(15,464)
Recognition and recovery of loss recovery components	592	222	-	-	-	-	814
Subtotal	42,785	192,233	-	-	3,561	-	238,579
(2) Contracts with premium allocation approach:	-	-	-	-	-	-	-
Total Reinsurance Revenue	42,785	192,233	-	-	3,561	-	238,579
4. Reinsurance Expenses							
(1) Contracts without premium allocation approach:							
Expected recoverable reinsurance claims and expenses	13,127	171,228	-	-	6,366	-	190,721
Variations in risk adjustments due to risk release	(37)	822	-	-	163	-	948
Reinsurance contract margins received for services provided	4,820	(65)	-	-	651	-	5,406
Experience adjustment of reinsurance premiums for current and past services	(540)	(361)	-	-	-	-	(901)

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Other reinsurance operating expenses	4,070	30,755	-	-	-	-	34,825
Subtotal	21,440	202,379	-	-	7,180	-	230,999
(2) Contracts with premium allocation approach:	223	-	-	-	-	9,570	9,793
Total Reinsurance Expenses	21,663	202,379	-	-	7,180	9,570	240,792
Total Insurance Service Results	₩ 299,340	₩ 298,767	₩ (60,932)	₩ 104,820	₩ (1,099)	₩ (9,832)	₩ 631,064

- Non-life Insurance

(in millions
of Korean won)

	Long-term	General	Automobile	Overseas	Subtotal
1. Insurance Revenue					
(1) Contracts without premium allocation approach:					
Estimated insurance claims and expenses	₩ 2,428,252	₩ -	₩ -	₩ -	₩ 2,428,252
Variations in risk adjustments due to risk release	76,166	-	-	-	76,166
Variations in contractual service margin due to service provision	387,990	-	-	-	387,990
Experience adjustment of premiums for current and past services	-	-	-	-	-
Recovery of cash flows from insurance acquisitions	360,398	-	-	-	360,398
Other insurance operating income	-	-	-	-	-
Subtotal	3,252,806	-	-	-	3,252,806
(2) Contracts with premium allocation approach:	-	608,230	1,012,245	209,817	1,830,292
Total Insurance Revenues	3,252,806	608,230	1,012,245	209,817	5,083,098
2. Insurance Service Expenses					
(1) Contracts without premium allocation approach:					
Actual insurance claims and expenses	2,214,148	-	-	-	2,214,148
Amortization expenses of cash flows from insurance acquisitions	360,398	-	-	-	360,398
Changes in fulfilment cash flow from incurred claims	(29,008)	-	-	-	(29,008)
Losses and recoveries from loss-bearing contracts	102,459	-	-	-	102,459
Other insurance operating expenses	259,786	-	-	-	259,786
Subtotal	2,907,783	-	-	-	2,907,783
(2) Contracts with premium allocation approach:	-	548,060	1,031,243	192,824	1,772,127
Total Insurance Service Expenses	2,907,783	548,060	1,031,243	192,824	4,679,910
3. Reinsurance Revenue					
(1) Contracts without premium allocation approach:					
Recovered amount of incurred reinsurance claims and expenses	38,193	-	-	-	38,193
Changes in fulfilment cash flow from incurred reinsurance claims	(1,375)	-	-	-	(1,375)
Recognition and recovery of loss recovery components	4,179	-	-	-	4,179
Subtotal	40,997	-	-	-	40,997
(2) Contracts with premium allocation approach:	108	175,167	155,323	8,864	339,462
Total Reinsurance Revenue	41,105	175,167	155,323	8,864	380,459
4. Reinsurance Expenses					
(1) Contracts without premium allocation approach:					
Expected recoverable reinsurance claims and expenses	40,358	-	-	-	40,358
Variations in risk adjustments due to risk release	1,093	-	-	-	1,093
Reinsurance contract margins received for services provided	2,030	-	-	-	2,030
Experience adjustment of reinsurance premiums for current and past services	(3,072)	-	-	-	(3,072)
Other reinsurance operating expenses	2,336	-	-	-	2,336
Subtotal	42,745	-	-	-	42,745
(2) Contracts with premium allocation approach:	2,640	249,567	163,590	28,617	444,414

Hanwha Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2023 and 2022

Total Reinsurance Expenses	45,385	249,567	163,590	28,617	487,159
Total Insurance Service Results	₩ 340,743	₩ (14,230)	₩ (27,265)	₩ (2,760)	₩ 296,488

- Total

(in millions
of Korean won)

Total

1. Insurance Revenue

(1) Contracts without premium allocation approach:

Estimated insurance claims and expenses	₩	5,445,760
Variations in risk adjustments due to risk release		196,142
Variations in contractual service margin due to service provision		1,289,886
Experience adjustment of premiums for current and past services		-
Recovery of cash flows from insurance acquisitions		1,059,620
Other insurance operating income		(48,126)
Subtotal		7,943,282

(2) Contracts with premium allocation approach:

Total Insurance Revenues	1,850,178
	9,793,460

2. Insurance Service Expenses

(1) Contracts without premium allocation approach:

Actual insurance claims and expenses	5,507,986
Amortization expenses of cash flows from insurance acquisitions	995,741
Changes in fulfilment cash flow from incurred claims	115,527
Losses and recoveries from loss-bearing contracts	214,421
Other insurance operating expenses	123,086
Subtotal	6,956,761

(2) Contracts with premium allocation approach:

Total Insurance Service Expenses	1,800,234
	8,756,995

3. Reinsurance Revenue

(1) Contracts without premium allocation approach:

Recovered amount of incurred reinsurance claims and expenses	291,422
Changes in fulfilment cash flow from incurred reinsurance claims	(16,839)
Recognition and recovery of loss recovery components	4,993
Subtotal	279,576

(2) Contracts with premium allocation approach:

Total Reinsurance Revenue	339,462
	619,038

4. Reinsurance Expenses

(1) Contracts without premium allocation approach:

Expected recoverable reinsurance claims and expenses	231,079
Variations in risk adjustments due to risk release	2,041
Reinsurance contract margins received for services provided	7,436
Experience adjustment of reinsurance premiums for current and past services	(3,973)
Other reinsurance operating expenses	37,161
Subtotal	273,744

(2) Contracts with premium allocation approach:

Total Reinsurance Expenses	454,207
	727,951

Total Insurance Service Results	₩	927,552
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Hanwha Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2023 and 2022

- 2022

- Life Insurance

(in millions
of Korean won)

	Death	Health	Pension Savings	Variable Insurance	Overseas	Complex	Others	Subtotal
1. Insurance Revenue								
(1) Contracts without premium allocation approach:								
Estimated insurance claims and expenses	₩ 1,068,067	₩ 942,057	₩ 306,186	₩ 450,035	₩ 2,403,873	₩ 61,516	₩ -	₩ 5,231,734
Variations in risk adjustments due to risk release	114,405	56,991	18,012	31,974	102,316	1,600	-	325,298
Variations in contractual service margin due to service provision	321,416	345,071	84,597	72,861	367,423	13,984	-	1,205,352
Experience adjustment of premiums for current and past services	-	-	-	-	-	-	-	-
Recovery of cash flows from insurance acquisitions	241,006	144,291	41,081	8,701	309,559	38,847	-	783,485
Other insurance operating income	(15,449)	(12,080)	6,778	(2,445)	-	(6,986)	-	(30,182)
Subtotal	1,729,445	1,476,330	456,654	561,126	3,183,171	108,961	-	7,515,687
(2) Contracts with premium allocation approach:	16,377	-	-	-	-	-	-	16,377
Total Insurance Revenues	1,745,822	1,476,330	456,654	561,126	3,183,171	108,961	-	7,532,064
2. Insurance Service Expenses								
(1) Contracts without premium allocation approach:								
Actual insurance claims and expenses	833,138	942,597	273,435	437,710	2,354,724	40,784	122	4,882,510
Amortization expenses of cash flows from insurance acquisitions	153,474	144,291	41,081	8,701	309,559	38,847	-	695,953
Changes in fulfilment cash flow from incurred claims	102,188	(3,983)	18,991	1,862	46,008	(32)	-	165,034
Losses and recoveries from loss-bearing contracts	(1,660)	224	147,595	61,883	105,914	12,699	-	326,655
Other insurance operating expenses	151,375	(168)	(4,245)	(2,694)	2,789	965	-	148,022
Subtotal	1,238,515	1,082,961	476,857	507,462	2,818,994	93,263	122	6,218,174
(2) Contracts with premium allocation approach:	39,965	-	-	-	-	-	-	39,965
Total Insurance Service Expenses	1,278,480	1,082,961	476,857	507,462	2,818,994	93,263	122	6,258,139
3. Reinsurance Revenue								
(1) Contracts without premium allocation approach:								
Recovered amount of incurred reinsurance claims and expenses	47,914	188,875	-	-	147,375	4,506	-	388,670
Changes in fulfilment cash flow from incurred reinsurance claims	(1,955)	(17,429)	-	-	(29,771)	38	-	(49,117)
Recognition and recovery of loss recovery components	-	-	-	-	(35,583)	-	-	(35,583)
Subtotal	45,959	171,446	-	-	82,021	4,544	-	303,970
(2) Contracts with premium allocation approach:	-	-	-	-	175	-	-	175
Total Reinsurance Revenue	45,959	171,446	-	-	82,196	4,544	-	304,145
4. Reinsurance Expenses								
(1) Contracts without premium allocation approach:								
Expected recoverable reinsurance claims and expenses	12,488	159,388	-	-	153,774	7,845	-	333,495
Variations in risk adjustments due to risk release	(29)	816	-	-	6,478	135	-	7,400
Reinsurance contract margins received for services provided	648	8,536	-	-	29,462	195	-	38,841

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Notes to the consolidated financial statements

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Experience adjustment of reinsurance premiums for current and past services	(58)	530	-	-	(35,754)	-	-	(35,282)
Other reinsurance operating expenses	3,159	25,209	-	-	16,579	-	-	44,947
Subtotal	16,208	194,479	-	-	170,539	8,175	-	389,401
(2) Contracts with premium allocation approach:	(11)	-	-	-	1,455	-	-	1,444
Total Reinsurance Expenses	16,197	194,479	-	-	171,994	8,175	-	390,845
Total Insurance Service Results	₩ 497,104	₩ 370,336	₩ (20,203)	₩ 53,664	₩ 274,379	₩ 12,067	₩ (122)	₩ 1,187,225

- Non-life Insurance

(in millions
of Korean won)

	Long-term	General	Automobile	Subtotal
1. Insurance Revenue				
(1) Contracts without premium allocation approach:				
Estimated insurance claims and expenses	₩ -	₩ -	₩ -	₩ -
Variations in risk adjustments due to risk release	-	-	-	-
Variations in contractual service margin due to service provision	-	-	-	-
Experience adjustment of premiums for current and past services	-	-	-	-
Recovery of cash flows from insurance acquisitions	-	-	-	-
Other insurance operating income	-	-	-	-
Subtotal	-	-	-	-
(2) Contracts with premium allocation approach:	551,101	938,007	-	1,489,108
Total Insurance Revenues	551,101	938,007	-	1,489,108
2. Insurance Service Expenses				
(1) Contracts without premium allocation approach:				
Actual insurance claims and expenses	-	-	-	-
Amortization expenses of cash flows from insurance acquisitions	-	-	-	-
Changes in fulfilment cash flow from incurred claims	-	-	-	-
Losses and recoveries from loss-bearing contracts	-	-	-	-
Other insurance operating expenses	-	-	-	-
Subtotal	-	-	-	-
(2) Contracts with premium allocation approach:	399,813	963,740	-	1,363,553
Total Insurance Service Expenses	399,813	963,740	-	1,363,553
3. Reinsurance Revenue				
(1) Contracts without premium allocation approach:				
Recovered amount of incurred reinsurance claims and expenses	-	-	-	-
Changes in fulfilment cash flow from incurred reinsurance claims	-	-	-	-
Recognition and recovery of loss recovery components	-	-	-	-
Subtotal	-	-	-	-
(2) Contracts with premium allocation approach:	136,024	186,154	-	322,178
Total Reinsurance Revenue	136,024	186,154	-	322,178
4. Reinsurance Expenses				
(1) Contracts without premium allocation approach:				
Expected recoverable reinsurance claims and expenses	-	-	-	-
Variations in risk adjustments due to risk release	-	-	-	-
Reinsurance contract margins received for services provided	-	-	-	-
Experience adjustment of reinsurance premiums for current and past services	-	-	-	-
Other reinsurance operating expenses	-	-	-	-

Hanwha Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2023 and 2022

Subtotal	-	-	-	-
(2) Contracts with premium allocation approach:	246,825	187,127	-	433,952
Total Reinsurance Expenses	246,825	187,127	-	433,952
Total Insurance Service Results	₩ 40,487	₩ (26,706)	₩ -	₩ 13,781

- Total

(in millions
of Korean won)

Total

1. Insurance Revenue

(1) Contracts without premium allocation approach:

Estimated insurance claims and expenses	₩ 5,231,734
Variations in risk adjustments due to risk release	325,298
Variations in contractual service margin due to service provision	1,205,352
Experience adjustment of premiums for current and past services	-
Recovery of cash flows from insurance acquisitions	783,485
Other insurance operating income	(30,182)
Subtotal	7,515,687

(2) Contracts with premium allocation approach:

Total Insurance Revenues	9,021,172
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2. Insurance Service Expenses

(1) Contracts without premium allocation approach:

Actual insurance claims and expenses	4,882,510
Amortization expenses of cash flows from insurance acquisitions	695,953
Changes in fulfilment cash flow from incurred claims	165,034
Losses and recoveries from loss-bearing contracts	326,655
Other insurance operating expenses	148,022
Subtotal	6,218,174

(2) Contracts with premium allocation approach:

Total Insurance Service Expenses	7,621,692
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3. Reinsurance Revenue

(1) Contracts without premium allocation approach:

Recovered amount of incurred reinsurance claims and expenses	388,670
Changes in fulfilment cash flow from incurred reinsurance claims	(49,117)
Recognition and recovery of loss recovery components	(35,583)
Subtotal	303,970

(2) Contracts with premium allocation approach:

Total Reinsurance Revenue	626,323
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4. Reinsurance Expenses

(1) Contracts without premium allocation approach:

Expected recoverable reinsurance claims and expenses	333,495
Variations in risk adjustments due to risk release	7,400
Reinsurance contract margins received for services provided	38,841
Experience adjustment of reinsurance premiums for current and past services	(35,282)
Other reinsurance operating expenses	44,947
Subtotal	389,401

(2) Contracts with premium allocation approach:

Total Reinsurance Expenses	824,797
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Hanwha Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2023 and 2022

Total Insurance Service Results

₩ 1,201,006

(10) The impacts on the consolidated statements of financial position at initial recognition of newly concluded insurance contracts for each of the two years in the period ended December 31, 2023 are as follows:

- 2023

(in millions of Korean won)	Issued insurance contracts		Insurance contract liability(asset)
	Excluding loss-absorbing contracts	Loss-absorbing contracts	
1. Present value estimate of future cash outflows	₩ 16,158,613	₩ 930,151	₩ 17,088,764
(1) Cash flows from insurance acquisitions	3,456,224	120,296	3,576,520
(2) Insurance claims and service expenses	12,702,389	809,855	13,512,244
2. Present value estimate of future cash inflows	(19,733,385)	(827,102)	(20,560,487)
3. Risk adjustment for non-financial risks	338,715	17,687	356,402
4. Contractual service margin	3,236,057	-	3,236,057
* Amount of loss component at beginning recognition	-	120,736	120,736

- 2022

(in millions of Korean won)	Issued insurance contracts		Insurance contract liability(asset)
	Excluding loss-absorbing contracts	Loss-absorbing contracts	
1. Present value estimate of future cash outflows	₩ 11,585,929	₩ 5,149,368	₩ 16,735,297
(1) Cash flows from insurance acquisitions	2,154,401	293,419	2,447,820
(2) Insurance claims and service expenses	9,431,528	4,855,949	14,287,477
2. Present value estimate of future cash inflows	(13,956,766)	(4,908,002)	(18,864,768)
3. Risk adjustment for non-financial risks	246,502	16,405	262,907
4. Contractual service margin	2,124,334	-	2,124,334
* Amount of loss component at beginning recognition	(1)	257,771	257,770

(11) The impacts on the consolidated statements of financial position at initial recognition of newly concluded reinsurance contracts for each of the two years in the period ended December 31, 2023 are as follows:

(in millions of Korean won)	2023		2022	
	Net cost contract	Net benefit contract	Net cost contract	Net benefit contract
1. Present value estimate of future cash inflows	₩ 280,659	₩ 1,078	₩ 296,069	₩ 244,963
2. Present value estimate of future cash outflows	310,328	1,057	301,751	265,027
3. Risk adjustment for non-financial risks	4,405	34	7,200	4,533
4. Contractual service margin	29,591	(22)	(943)	27,775
* Amount of loss recovery at beginning recognition	4,327	33	575	12,244

Hanwha Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2023 and 2022

(12) Contractual service margin for each expected amortization period of insurance contract issued and reinsurance contracts held as of December 31, 2023 and 2022 are as follows:

- 2023

(in millions of Korean won)		Less than 1 year	1 to 2 years	2 to 3 years	3 to 4 years	4 to 5 years	5 to 10 years	10 to 20 years	20 to 30 years	More than 30 years	Total
<i>Issued insurance contracts</i>											
<i>Life Insurance</i>	<i>Death</i>	₩ 165,816	₩ 127,925	₩ 112,155	₩ 104,569	₩ 100,227	₩ 442,984	₩ 785,263	₩ 715,926	₩ 1,107,150	₩ 3,662,015
	<i>Health</i>	245,037	222,322	198,939	180,498	166,512	701,583	1,006,953	634,443	710,025	4,066,312
	<i>Pension savings</i>	66,396	59,901	54,538	48,982	43,755	169,062	187,625	83,468	38,559	752,286
	<i>Variable Insurance</i>	37,845	34,475	32,105	30,294	28,762	125,406	188,427	132,043	153,612	762,969
	<i>Others</i>	29	-	-	-	-	-	-	-	-	29
	<i>Overseas</i>	104,616	6,044	2,640	2,137	1,785	5,391	3,111	522	105	126,351
<i>Non-life Insurance</i>	<i>Long-term</i>	376,247	323,272	284,475	253,581	227,076	848,542	1,613,668	-	-	3,926,861
Total		₩ 995,986	₩ 773,939	₩ 684,852	₩ 620,061	₩ 568,117	₩ 2,292,968	₩ 3,785,047	₩ 1,566,402	₩ 2,009,451	₩ 13,296,823
<i>Held reinsurance contracts</i>											
<i>Life Insurance</i>	<i>Death</i>	₩ 5,315	₩ 5,464	₩ 5,024	₩ 4,607	₩ 4,209	₩ 16,075	₩ 16,719	₩ 6,434	₩ 2,801	₩ 66,648
	<i>Health</i>	12,716	11,423	9,935	8,610	7,282	24,207	15,538	1,782	899	92,392
	<i>Overseas</i>	22,177	4,160	859	245	127	427	527	277	307	29,106
<i>Non-life Insurance</i>	<i>Long-term</i>	1,936	1,760	1,644	1,541	1,446	5,697	13,281	-	-	27,305
Total		₩ 42,144	₩ 22,807	₩ 17,462	₩ 15,003	₩ 13,064	₩ 46,406	₩ 46,065	₩ 8,493	₩ 4,007	₩ 215,451

- 2022

(in millions of Korean won)		Less than 1 year	1 to 2 years	2 to 3 years	3 to 4 years	4 to 5 years	5 to 10 years	10 to 20 years	20 to 30 years	More than 30 years	Total
<i>Issued insurance contracts</i>											
<i>Life Insurance</i>	<i>Death</i>	₩ 185,174	₩ 159,286	₩ 144,496	₩ 134,662	₩ 127,305	₩ 558,671	₩ 969,029	₩ 838,701	₩ 1,413,555	₩ 4,530,879
	<i>Health</i>	238,730	209,355	186,863	167,467	151,827	629,049	855,395	576,590	775,979	3,791,255
	<i>Pension savings</i>	51,375	47,203	43,264	39,076	34,189	122,665	122,732	61,989	39,261	561,754
	<i>Variable Insurance</i>	45,910	44,288	42,862	41,549	40,331	181,256	273,830	168,199	141,480	979,705
	<i>Long-term</i>	349,387	301,131	265,575	237,488	214,426	816,940	1,542,837	-	-	3,727,784
	Total	₩ 870,576	₩ 761,263	₩ 683,060	₩ 620,242	₩ 568,078	₩ 2,308,581	₩ 3,763,823	₩ 1,645,479	₩ 2,370,275	₩ 13,591,377
<i>Held reinsurance contracts</i>											
<i>Life Insurance</i>	<i>Death</i>	₩ 3,118	₩ 2,890	₩ 2,652	₩ 2,433	₩ 2,243	₩ 8,943	₩ 10,220	₩ 4,124	₩ 5,943	₩ 42,566
	<i>Health</i>	13,113	12,215	10,397	9,078	8,064	30,066	33,563	15,002	8,117	139,615
	<i>Long-term</i>	1,331	1,135	1,005	899	809	3,070	7,271	-	-	15,520
Total		₩ 17,562	₩ 16,240	₩ 14,054	₩ 12,410	₩ 11,116	₩ 42,079	₩ 51,054	₩ 19,126	₩ 14,060	₩ 197,701

Hanwha Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2023 and 2022

(13) The total amount recognized as insurance finance income, the amount of insurance finance income recognized in other comprehensive income, and investment income from assets for each of the two years in the period ended December 31, 2023 are as follows:

- 2023

- Life Insurance

(in millions
of Korean won)

	Retirement	Variable Insurance	Overseas	Others	Subtotal
1. Investment Income (expense)					
(1) Investment income (expense) recognized in profit or loss:					
Net interest income (expense)	₩ 247,901	₩ 254,534	₩ 72,361	₩ 2,018,538	₩ 2,593,334
Dividend income	35	35,603	1,884	3,171	40,693
Gains (losses) on valuation and disposal of securities	164,770	1,288,297	11,005	145,958	1,610,030
Gains (losses) on valuation and disposal of loans and other receivables	-	-	-	-	-
Gains (losses) on derivative instruments	(14,035)	53,248	-	(403,172)	(363,959)
Gains (losses) on investments in shares of subsidiaries	-	-	-	-	-
Gains (losses) on foreign exchange transactions	5,711	6,821	(1)	356,892	369,423
Other investment income (expense)	(395,625)	5,577	(901)	567,006	176,057
Subtotal	8,757	1,644,080	84,348	2,688,393	4,425,578
(2) Investment income (recognized in other comprehensive income)	327,841	-	3,793	(639,088)	(307,454)
Total investment income (expense)	₩ 336,598	₩ 1,644,080	₩ 88,141	₩ 2,049,305	₩ 4,118,124
2. Insurance Financial Income (expense)					
(1) Insurance financial income (expense) recognized in profit or loss:					
Net interest income (expense)	(1,426)	(4,004)	91	(2,711,059)	(2,716,398)
Effects of changes in discount rates and financial assumptions	-	-	44	-	44
Effects of exchange rate changes	-	-	-	-	-
Other insurance financial income (expense)	-	-	(2,009)	142	(1,867)
Changes in fair value of basic items of directly participating contracts	-	(1,653,605)	(11,155)	-	(1,664,760)
Group's share of changes in fair value of underlying items of directly participating contracts or changes in cash flows from services provided without adjusting contract service margins	-	42,736	-	-	42,736
Subtotal	(1,426)	(1,614,873)	(13,029)	(2,710,917)	(4,340,245)
(2) Insurance financial income (expense) recognized in other comprehensive income	-	-	(123,742)	(4,152,996)	(4,276,738)
Total insurance financial income (expense)	₩ (1,426)	₩ (1,614,873)	₩ (136,771)	₩ (6,863,913)	₩ (8,616,983)
3. Reinsurance Financial Income (expense)					
(1) Reinsurance financial income (expense) recognized in profit or loss:					
Net interest income (expense)	-	-	297	2,529	2,826
Effects of changes in discount rates and financial assumptions	-	-	2,671	-	2,671
Effects of exchange rate changes	-	-	-	-	-
Other reinsurance financial income (expense)	-	-	-	(1,253)	(1,253)
Subtotal	-	-	2,968	1,276	4,244
(2) Reinsurance financial income (expense) recognized in other comprehensive income	-	-	3,775	(21,890)	(18,115)
Total reinsurance financial income (expense)	₩ -	₩ -	₩ 6,743	₩ (20,614)	₩ (13,871)
4. Net Investment Income (expense) Recognized in Profit or Loss and Other Comprehensive Income	₩ 335,172	₩ 29,207	₩ (41,887)	₩ (4,835,222)	₩ (4,512,730)

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December 31, 2023 and 2022

- Non-life Insurance

(in millions
of Korean won)

	Long-term	General and Automobile	Oversea s	Subtotal
<i>1. Investment Income (expense)</i>				
<i>(1) Investment income (expense) recognized in profit or loss:</i>				
Net interest income (expense)	₩ -	₩ 339,426	₩ 3,040	₩ 342,466
Dividend income	-	16,001	219	16,220
Gains (losses) on valuation and disposal of securities	-	43,673	1,279	44,952
Gains (losses) on valuation and disposal of loans and other receivables	-	(3,834)	-	(3,834)
Gains (losses) on derivative instruments	-	(72,935)	-	(72,935)
Gains (losses) on investments in shares of subsidiaries	-	-	-	-
Gains (losses) on foreign exchange transactions	-	64,611	300	64,911
Other investment income (expense)	-	147,567	-	147,567
Subtotal	-	534,509	4,838	539,347
<i>(2) Investment income (recognized in other comprehensive income)</i>	-	(900,098)	-	(900,098)
Total investment income (expense)	₩ -	₩ (365,589)	₩ 4,838	₩ (360,751)
<i>2. Insurance Financial Income (expense)</i>				
<i>(1) Insurance financial income (expense) recognized in profit or loss:</i>				
Net interest income (expense)	(404,111)	(23,972)	(1,645)	(429,728)
Effects of changes in discount rates and financial assumptions	14,630	(364)	-	14,266
Effects of exchange rate changes	-	59	-	59
Other insurance financial income (expense)	-	-	-	-
Changes in fair value of basic items of directly participating contracts	-	-	-	-
Group's share of changes in fair value of underlying items of directly participating contracts or changes in cash flows from services provided without adjusting contract service margins	-	-	-	-
Subtotal	(389,481)	(24,277)	(1,645)	(415,403)
<i>(2) Insurance financial income (expense) recognized in other comprehensive income</i>	(971,984)	(4,364)	61	(976,287)
Total insurance financial income (expense)	₩ (1,361,465)	₩ (28,641)	₩ (1,584)	₩ (1,391,690)
<i>3. Reinsurance Financial Income (expense)</i>				
<i>(1) Reinsurance financial income (expense) recognized in profit or loss:</i>				
Net interest income (expense)	3,616	11,539	204	15,359
Effects of changes in discount rates and financial assumptions	(8)	150	-	142
Effects of exchange rate changes	-	(1,812)	-	(1,812)
Other reinsurance financial income (expense)	(68)	(4,980)	-	(5,048)
Subtotal	3,540	4,897	204	8,641
<i>(2) Reinsurance financial income (expense) recognized in other comprehensive income</i>	3,302	1,079	-	4,381
Total reinsurance financial income (expense)	₩ 6,842	₩ 5,976	₩ 204	₩ 13,022
<i>4. Net Investment Income (expense) Recognized in Profit or Loss and Other Comprehensive Income</i>	₩ (1,354,623)	₩ (388,254)	₩ 3,458	₩ (1,739,419)

Hanwha Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2023 and 2022

- Total

(in millions
of Korean won)

	Total
1. Investment Income (expense)	
(1) Investment income (expense) recognized in profit or loss:	
Net interest income (expense)	₩ 2,935,800
Dividend income	56,913
Gains (losses) on valuation and disposal of securities	1,654,982
Gains (losses) on valuation and disposal of loans and other receivables	(3,834)
Gains (losses) on derivative instruments	(436,894)
Gains (losses) on investments in shares of subsidiaries	-
Gains (losses) on foreign exchange transactions	434,334
Other investment income (expense)	323,624
Subtotal	4,964,925
(2) Investment income (recognized in other comprehensive income)	(1,207,552)
Total investment income (expense)	₩ 3,757,373
2. Insurance Financial Income (expense)	
(1) Insurance financial income (expense) recognized in profit or loss:	
Net interest income (expense)	(3,146,126)
Effects of changes in discount rates and financial assumptions	14,310
Effects of exchange rate changes	59
Other insurance financial income (expense)	(1,867)
Changes in fair value of basic items of directly participating contracts	(1,664,760)
Group's share of changes in fair value of underlying items of directly participating contracts or changes in cash flows from services provided without adjusting contract service margins	42,736
Subtotal	(4,755,648)
(2) Insurance financial income (expense) recognized in other comprehensive income	(5,253,025)
Total insurance financial income (expense)	₩ (10,008,673)
3. Reinsurance Financial Income (expense)	
(1) Reinsurance financial income (expense) recognized in profit or loss:	
Net interest income (expense)	18,185
Effects of changes in discount rates and financial assumptions	2,813
Effects of exchange rate changes	(1,812)
Other reinsurance financial income (expense)	(6,301)
Subtotal	12,885
(2) Reinsurance financial income (expense) recognized in other comprehensive income	(13,734)
Total reinsurance financial income (expense)	₩ (849)
4. Net Investment Income (expense) Recognized in Profit or Loss and Other Comprehensive Income	₩ (6,252,149)

Hanwha Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2023 and 2022

- 2022

- Life Insurance

(in millions
of Korean won)

	Retirement	Variable Insurance	Overseas	Others	Subtotal
1. Investment Income (expense)					
(1) Investment income (expense) recognized in profit or loss:					
Net interest income (expense)	₩ 183,054	₩ 187,530	₩ 49,972	₩ 2,055,184	₩ 2,475,740
Dividend income	412	92,738	62	743,249	836,461
Gains (losses) on valuation and disposal of securities	5,650	(1,625,579)	1,277	198,123	(1,420,529)
Gains (losses) on valuation and disposal of loans and other receivables	-	-	-	-	-
Gains (losses) on derivative instruments	(17,581)	(86,872)	-	(1,183,526)	(1,287,979)
Gains (losses) on investments in shares of subsidiaries	-	-	-	-	-
Gains (losses) on foreign exchange transactions	17,742	24,857	69	816,279	858,947
Other investment income (expense)	(204,188)	(16,725)	-	(330,600)	(551,513)
Subtotal	(14,911)	(1,424,051)	51,380	2,298,709	911,127
(2) Investment income (expense) recognized in other comprehensive income	(270,676)	-	-	3,774,017	3,503,341
Total investment income (expense)	₩ (285,587)	₩ (1,424,051)	₩ 51,380	₩ 6,072,726	₩ 4,414,468
2. Insurance Financial Income (expense)					
(1) Insurance financial income (expense) recognized in profit or loss:					
Net interest income (expense)	(960)	(4,221)	(24,656)	(2,559,898)	(2,589,735)
Effects of changes in discount rates and financial assumptions	-	-	-	-	-
Effects of exchange rate changes	-	-	-	-	-
Other insurance financial income (expense)	-	-	-	3,012	3,012
Changes in fair value of basic items of directly participating contracts	-	1,420,299	-	-	1,420,299
Group's share of changes in fair value of underlying items of directly participating contracts or changes in cash flows from services provided without adjusting contract service margins	-	426,373	-	-	426,373
Subtotal	(960)	1,842,451	(24,656)	(2,556,886)	(740,051)
(2) Insurance financial income (expense) recognized in other comprehensive income	-	-	113,824	9,364,581	9,478,405
Total insurance financial income (expense)	₩ (960)	₩ 1,842,451	₩ 89,168	₩ 6,807,695	₩ 8,738,354
3. Reinsurance Financial Income (expense)					
(1) Reinsurance financial income (expense) recognized in profit or loss:					
Net interest income (expense)	-	-	(373)	2,626	2,253
Effects of changes in discount rates and financial assumptions	-	-	-	-	-
Effects of exchange rate changes	-	-	-	-	-
Other reinsurance financial income (expense)	-	-	-	(3,012)	(3,012)
Subtotal	-	-	(373)	(386)	(759)
(2) Reinsurance financial income (expense) recognized in other comprehensive income	-	-	(594)	28,405	27,811
Total reinsurance financial income (expense)	₩ -	₩ -	₩ (967)	₩ 28,019	₩ 27,052
4. Net Investment Income (expense) Recognized in Profit or Loss and Other Comprehensive Income	₩ (286,547)	₩ 418,400	₩ 139,581	₩ 12,908,440	₩ 13,179,874

Hanwha Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2023 and 2022

- Non-life Insurance

(in millions
of Korean won)

	Long-term	General and Automobile	Overseas	Subtotal
<i>1. Investment Income (expense)</i>				
<i>(1) Investment income (expense) recognized in profit or loss:</i>				
Net interest income (expense)	₩ 291,830	₩ 168	₩ -	₩ 291,998
Dividend income	13,434	-	-	13,434
Gains (losses) on valuation and disposal of securities	(78,457)	1,982	-	(76,475)
Gains (losses) on valuation and disposal of loans and other receivables	1,405	-	-	1,405
Gains (losses) on derivative instruments	(66,678)	-	-	(66,678)
Gains (losses) on investments in shares of subsidiaries	-	-	-	-
Gains (losses) on foreign exchange transactions	72,552	(262)	-	72,290
Other investment income (expense)	167,050	(3,781)	-	163,269
Subtotal	401,136	(1,893)	-	399,243
<i>(2) Investment income (recognized in other comprehensive income</i>	(1,895,233)	(154)	-	(1,895,387)
Total investment income (expense)	₩ (1,494,097)	₩ (2,047)	₩ -	₩ (1,496,144)
<i>2. Insurance Financial Income (expense)</i>				
<i>(1) Insurance financial income (expense) recognized in profit or loss:</i>				
Net interest income (expense)	(375,892)	(13,051)	-	(388,943)
Effects of changes in discount rates and financial assumptions	(4,366)	148	-	(4,218)
Effects of exchange rate changes	-	(2,034)	-	(2,034)
Other insurance financial income (expense)	-	-	-	-
Changes in fair value of basic items of directly participating contracts	-	-	-	-
Group's share of changes in fair value of underlying items of directly participating contracts or changes in cash flows from services provided without adjusting contract service margins	-	-	-	-
Subtotal	(380,258)	(14,937)	-	(395,195)
<i>(2) Insurance financial income (expense) recognized in other comprehensive income</i>	2,626,493	6,818	-	2,633,311
Total insurance financial income (expense)	₩ 2,246,235	₩ (8,119)	₩ -	₩ 2,238,116
<i>3. Reinsurance Financial Income (expense)</i>				
<i>(1) Reinsurance financial income (expense) recognized in profit or loss:</i>				
Net interest income (expense)	6,664	6,307	-	12,971
Effects of changes in discount rates and financial assumptions	21	(81)	-	(60)
Effects of exchange rate changes	-	217	-	217
Other reinsurance financial income (expense)	13	8,452	-	8,465
Subtotal	6,698	14,895	-	21,593
<i>(2) Reinsurance financial income (expense) recognized in other comprehensive income</i>	(8,108)	(2,533)	-	(10,641)
Total reinsurance financial income (expense)	₩ (1,410)	₩ 12,362	₩ -	₩ 10,952
<i>4. Net Investment Income (expense) Recognized in Profit or Loss and Other Comprehensive Income</i>	₩ 750,728	₩ 2,196	₩ -	₩ 752,924

Hanwha Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2023 and 2022

- Total

(in millions
of Korean won)

	Total
1. Investment Income (expense)	
(1) Investment income (expense) recognized in profit or loss:	
Net interest income (expense)	₩ 2,767,738
Dividend income	849,895
Gains (losses) on valuation and disposal of securities	(1,497,004)
Gains (losses) on valuation and disposal of loans and other receivables	1,405
Gains (losses) on derivative instruments	(1,354,657)
Gains (losses) on investments in shares of subsidiaries	-
Gains (losses) on foreign exchange transactions	931,237
Other investment income (expense)	(388,244)
Subtotal	1,310,370
(2) Investment income (recognized in other comprehensive income	1,607,954
Total investment income (expense)	₩ 2,918,324
2. Insurance Financial Income (expense)	
(1) Insurance financial income (expense) recognized in profit or loss:	
Net interest income (expense)	(2,978,678)
Effects of changes in discount rates and financial assumptions	(4,218)
Effects of exchange rate changes	(2,034)
Other insurance financial income (expense)	3,012
Changes in fair value of basic items of directly participating contracts	1,420,299
Group's share of changes in fair value of underlying items of directly participating contracts or changes in cash flows from services provided without adjusting contract service margins	426,373
Subtotal	(1,135,246)
(2) Insurance financial income (expense) recognized in other comprehensive income	12,111,716
Total insurance financial income (expense)	₩ 10,976,470
3. Reinsurance Financial Income (expense)	
(1) Reinsurance financial income (expense) recognized in profit or loss:	
Net interest income (expense)	15,224
Effects of changes in discount rates and financial assumptions	(60)
Effects of exchange rate changes	217
Other reinsurance financial income (expense)	5,453
Subtotal	20,834
(2) Reinsurance financial income (expense) recognized in other comprehensive income	17,170
Total reinsurance financial income (expense)	₩ 38,004
4. Net Investment Income (expense) Recognized in Profit or Loss and Other Comprehensive Income	₩ 13,932,798

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Notes to the consolidated financial statements

December 31, 2023 and 2022

(14) The insurance revenue and changes in contractual service margin by conversion method for insurance contracts for each of the two years in the period ended December 31, 2023 are as follows:

- 2023

<i>(in millions of Korean won)</i>	Contracts applying the retrospective method		Contracts applying the fair value method		All other contracts		Total
1. Insurance revenue	₩	1,866,729	₩	4,682,918	₩	3,243,812	₩ 9,793,459
2. Beginning contractual service margin		5,925,549		5,453,928		2,211,900	13,591,377
3. Insurance service results		(964,074)		(1,549,821)		1,703,055	(810,840)
(1) Changes related to current services:		(510,488)		(406,138)		(373,260)	(1,289,886)
Recognition of profit or loss related to provided services during the period		(510,488)		(406,138)		(373,260)	(1,289,886)
(2) Changes related to future services:		(453,586)		(1,143,683)		2,076,315	479,046
Changes in estimated adjustments to contractual service margin		(453,586)		(1,143,683)		(1,159,742)	(2,757,011)
Effects of recognition of new contracts		-		-		3,236,057	3,236,057
4. Insurance financial income (expense)		193,810		135,207		175,658	504,675
5. Other changes		-		(2,839)		14,450	11,611
6. Ending contractual service margin		5,155,285		4,036,475		4,105,063	13,296,823

- 2022

<i>(in millions of Korean won)</i>	Contracts applying the retrospective method		Contracts applying the fair value method		All other contracts		Total
1. Insurance revenue	₩	2,187,285	₩	4,842,010	₩	1,991,878	₩ 9,021,173
2. Beginning contractual service margin		6,122,483		4,622,422		72,865	10,817,770
3. Insurance service results		(380,040)		2,872,322		2,101,327	4,593,609
(1) Changes related to current services:		(606,957)		(447,109)		(151,286)	(1,205,352)
Recognition of profit or loss related to provided services during the period		(606,957)		(447,109)		(151,286)	(1,205,352)
(2) Changes related to future services:		226,917		3,319,431		2,252,613	5,798,961
Changes in estimated adjustments to contractual service margin		226,917		3,319,431		128,279	3,674,627
Effects of recognition of new contracts		-		-		2,124,334	2,124,334
4. Insurance financial income (expense)		183,106		(2,049,743)		46,635	(1,820,002)
5. Ending contractual service margin		5,925,549		5,445,001		2,220,827	13,591,377

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December 31, 2023 and 2022

(15) The distribution amounts of reinsurance premiums and the changes in reinsurance contract service margin by conversion method for each of the two years in the period ended December 31, 2023 are as follows:

- 2023

<i>(in millions of Korean won)</i>	Contracts applying the retrospective method		Contracts applying the fair value method		All other contracts		Total
1. Distribution amount of reinsurance premiums	₩	75,886	₩	163,282	₩	488,780	₩ 727,948
2. Beginning reinsurance contract margin		34,281		145,320		18,101	197,702
3. Reinsurance service results		19,254		(46,208)		38,976	12,022
(1) Changes related to current services:		(5,053)		2,563		(2,382)	(4,872)
Recognition of profit or loss related to services received during the period		(5,053)		2,563		(2,382)	(4,872)
(2) Changes related to future services:		24,307		(48,771)		41,358	16,894
Changes in estimated adjustments to reinsurance contract margins		24,307		(48,771)		11,789	(12,675)
Effects of recognition of new contracts		-		-		29,569	29,569
4. Reinsurance financial income		841		3,706		1,930	6,477
5. Other changes		-		(392)		(357)	(749)
6. Ending reinsurance contract margin		54,376		102,426		58,650	215,452

- 2022

<i>(in millions of Korean won)</i>	Contracts applying the retrospective method		Contracts applying the fair value method		All other contracts		Total
1. Distribution amount of reinsurance premiums	₩	64,515	₩	314,569	₩	445,713	₩ 824,797
2. Beginning reinsurance contract margin		27,374		152,826		-	180,200
3. Reinsurance service results		6,044		(12,254)		17,597	11,387
(1) Changes related to current services:		(7,143)		(29,263)		(2,435)	(38,841)
Recognition of profit or loss related to services received during the period		(7,143)		(29,263)		(2,435)	(38,841)
(2) Changes related to future services:		13,187		17,009		20,032	50,228
Changes in estimated adjustments to reinsurance contract margins		13,165		17,009		(6,777)	23,397
Effects of recognition of new contracts		22		-		26,809	26,831
4. Reinsurance financial income		692		4,989		432	6,113
5. Ending reinsurance contract margin		34,110		145,561		18,029	197,700

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Notes to the consolidated financial statements

December 31, 2023 and 2022

(16) The fair value details of the underlying items of contracts with direct participation feature of the Group as of December 31, 2023 and 2022 are as follows:

(in millions of Korean won)	2023		2022	
Cash and Cash equivalents	₩	306,430	₩	292,351
Financial instruments		15,143,197		14,104,680
Accounts receivable		98,052		144,479
Derivatives		93,829		34,515
Others		110,926		113,995
Total	₩	15,752,434	₩	14,690,020

37. Adjustment for Policyholder Interest (Financial Business)

Details of policyholders' equity adjustment as of December 31, 2023 and 2022 are as follows:

(in millions of Korean won)	2023		2022	
Loss on valuation of financial assets at fair value through other comprehensive income	₩	(45,213)	₩	(67,273)
Gain on revaluation of property, plant and equipment ¹		201,688		200,793
Total	₩	156,475	₩	133,520

¹ Gain on revaluation of property, plant and equipment is the amount of the gain on revaluation of property, plant and equipment, for which revaluation was made using deemed cost as of the adoption of KIFRS, that is allocated pro rata to the interest held by policyholders.

According to KIFRS 1117 *Insurance Contracts*, the Group is required to estimate the related cash flows for dividends that may arise from participating insurance contracts, and measure insurance liabilities using discount rates that reflect assumptions and risks. This requirement, different from the previous accounting treatment under KIFRS 1104 *Insurance Contracts*, fails to relevantly present the potential obligations for participating policyholders.

However, due to potential conflicts with "The objective of financial statements" as stipulated in the "Conceptual Framework," which may cause misunderstandings among financial statement users, the Group has calculated insurance liabilities using the method specified in Article 4-1(2) of the Insurance Business Regulations.

Other than the matter described above, the consolidated financial statements of the Group have been prepared in compliance with KIFRS, and its liabilities and equity increased and decreased by KRW 35,598 million as of December 31, 2023 compared to the amounts of liabilities and equity when applying KIFRS 1117 Insurance Contracts (KRW 17,888 million in 2022).

The management has concluded that the consolidated financial statements of the Group, including the aforementioned matters, fairly present the financial position as of December 31, 2023 and 2022 and January 1, 2022, and the financial performance and cash flows for each of the two years in the

Hanwha Corporation and its subsidiaries
Notes to the consolidated financial statements
December 31, 2023 and 2022

period ended December 31, 2023.

38. Withheld Liabilities (Financial Business)

Details of withheld liabilities as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>	Interest rate (%)	2023		2022	
Ordinary deposits	0.00~10.00	₩	1,996	₩	1,215
Time deposits	1.55~6.30		1,116,564		1,358,705
Installment deposits	2.05~3.55		1,718		3,640
Customers' deposits	-		1,114,904		619,119
Guarantee deposits	-		36		3,757
Others	2.00~4.30		1,586		374
Total		₩	2,236,804	₩	1,986,810

39. Post-employment Benefits (Financial Business)

(1) Details of net defined benefit liabilities as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>	2023		2022	
Present value of defined benefit obligations	₩	505,948	₩	468,009
Fair value of plan assets		(258,424)		(255,168)
Post-employment Benefits	₩	247,524	₩	212,841

(2) Movements in the defined benefit obligations for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>	2023		2022	
Beginning balance	₩	468,009	₩	500,314
Current service cost		34,572		49,277
Interest expense		26,227		16,209
Remeasurements:				
Actuarial loss from change in demographic assumptions		299		1,022
Actuarial loss (gain) from change in financial assumptions		15,598		(53,611)
Actuarial loss from experience adjustments		11,596		19,601
Benefit payments		(66,345)		(64,434)
Others ¹		15,992		(369)
Ending balance	₩	505,948	₩	468,009

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¹ Others include the impact of changes in consolidations scope, changes in exchange rate and transfer to and from affiliates.

(3) Movements in the fair value of plan assets for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>	2023		2022	
Beginning balance	₩	255,168	₩	250,418
Interest income		15,858		13,665
Remeasurements ¹		(5,411)		(9,278)
Contributions		36,136		87,687
Benefit payments		(57,815)		(75,031)
Others ²		14,488		(12,293)
Ending balance	₩	<u>258,424</u>	₩	<u>255,168</u>

¹ Excluded the amount that is included in interest income.

² Others include the impact of changes in consolidations scope, changes in exchange rate and transfer to and from associates.

(4) Amounts recognized in the consolidated statements of comprehensive income for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>	2023		2022	
Current service cost	₩	34,572	₩	49,277
Net interest expense		10,369		2,544
Expense included in employee benefit ¹	₩	<u>44,941</u>	₩	<u>51,821</u>

¹ Entire expenses are included in 'cost of sales'.

(5) Defined benefit plan

The Group operates defined contribution retirement pension for qualifying employees who have rendered service. Plan assets are operated in the form of funds independently from the Group's other assets by the control of fiduciary. If an employee leaves the Group before meeting the qualification to obtain vested rights, his or her contribution benefit will be decreased due to the early retirement. This also leads to the decrease of contribution benefit payables to the employee by the same amount of decreased contribution from the early retirement.

The actual expenses from defined contribution retirement pension for the years ended December 31, 2023 and 2022 are ₩ 7,270 million and ₩ 2,750 million, respectively.

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(6) Other long-term employee benefits

The Group provide long-term employee benefits that are provided to employees with certain level of service periods. The expected cost of these benefits is accrued over the period of employment using the same accounting methodology as used for defined benefit pension plans. The re-measurement amount derived from change is actuarial assumptions and the difference between actuarial assumption and the actual result is recognized in profit and loss. This benefit is assessed by an independent and qualified actuary at the end of every year end.

As of and for the year ended December 31, 2023, the Group recognizes liabilities of ₩ 51,092 million (₩ 44,920 million in 2022) and expense of ₩ 12,069 million (₩ 1,670 million in 2022) in connection with the long-term employee benefits.

(7) The significant actuarial assumptions as of December 31, 2023 and 2022 are as follows:

<i>(in percentage, %)</i>	2023	2022
Discount rate	4.86 ~5.31	3.37 ~6.15
Salary growth rate	3.14 ~4.76	3.10 ~4.81

(8) The sensitivity of the defined benefit obligation to changes in the principal assumptions is:

	Changes in principal assumption	Effect on defined benefit obligations
Discount rate	Increase of 1%	5.30% decrease
	Decrease of 1%	5.87% increase
Salary growth rate	Increase of 1%	6.00% increase
	Decrease of 1%	5.46% decrease

Because there is a correlation between actuarial assumptions, the sensitivity analysis above will not show actual changes in the defined benefit obligation, as changes in assumptions will not occur independently. Also, in the above sensitivity analysis, the present value of the defined benefit obligation was measured using the projected unit credit method applied to measure the defined benefit obligation in the consolidated financial statements.

(9) Plan assets as of December 31, 2023 and 2022, consist of:

	2023		2022	
	Amount	Composition	Amount	Composition
Principal guaranteed financial instruments	₩ 258,078	99.87%	₩ 254,861	99.88%
Transferred to National Pension Fund and others	346	0.13%	307	0.12%
Total	₩ 258,424	100.00%	₩ 255,168	100.00%

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(10) The weighted-average duration of the defined benefit obligation is 4.96 ~ 7.23 years.

40. Provisions (Financial Business)

Changes in the provisions for each of the two years in the period ended December 31, 2023 are as follows:

(in millions of Korean won)

(in millions of Korean won)

	2023						
	Provision for restoration		Provision for unused credit limit		Provision for others		Total
Beginning	₩	19,035	₩	39,036	₩	112,155	₩ 170,226
Increase		6,554		3		42,004	48,561
Used during year		(1,227)		-		(49,230)	(50,457)
Reversal		(121)		(16)		(1,179)	(1,316)
Others ¹		3,164		3		2,889	6,056
Ending	₩	27,405	₩	39,026	₩	106,639	₩ 173,070

¹ Others include changes in scope of consolidation and the effect of changes in exchange rate.

(in millions of Korean won)

(in millions of Korean won)

	2022						
	Provision for restoration		Provision for unused credit limit		Provision for others		Total
Beginning	₩	15,567	₩	59,142	₩	62,438	₩ 137,147
Increase		7,305		-		65,949	73,254
Used during year		(5,652)		(20,070)		(4,439)	(30,161)
Reversal		(2,619)		(34)		(11,593)	(14,246)
Others ¹		4,434		(2)		(200)	4,232
Ending	₩	19,035	₩	39,036	₩	112,155	₩ 170,226

¹ Others include changes in scope of consolidation and the effect of changes in exchange rate.

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41. Other Financial Liabilities (Financial Business)

(1) Details of other financial liabilities as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>	2023		2022	
Borrowings and debentures	₩	10,819,312	₩	9,624,535
Insurance benefits payable		-		3,378
Other payable		972,053		560,070
Accrued expenses		603,925		588,348
Leasehold deposits received		73,358		76,188
Other financial liabilities		1,126,072		910,320
Lease liabilities		279,784		241,802
Financial liabilities at fair value through profit or loss		1,879,109		2,769,310
Dividend payable		128		241
Liabilities attributable to non-controlling interest		53,991		25,999
Total	₩	15,807,732	₩	14,800,191

(2) Details of borrowings as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>		Annual interest rate (%)				
Description	Creditor		2023		2022	
Bonds sold under repurchase agreements	Citibank Korea and others	0.35~5.74	₩	3,843,411	₩	4,001,844
Borrowings under securities finance	The Korea Securities Finance Corporation and others	3.78~4.83		807,468		562,993
Corporate paper and electronic short-term bond	Hi investment & Securities and others	3.9~10.81		1,755,731		1,888,848
Loans on land and buildings	KB Life Insurance and others	2.52~5.02		1,448,477		61,891
Borrowings from banks	Shinhan bank and others	LIBOR 3M + 2.9		164,996		-
Total			₩	8,020,083	₩	6,515,576

In addition, the Group provided property, plant and equipment and others as collateral for the above borrowings (Note 56).

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(3) Repayment schedules of borrowings as of December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>	Less than 1 year	Between 1 and 5 years	More than 5 years	Total
Expected repayment amount	₩ 7,367,752	₩ 528,885	₩ 123,446	₩ 8,020,083

(4) Details of debentures as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>	2023	2022
Hanwha Life Insurance Co., Ltd.	₩ 1,866,658	₩ 1,350,184
Hanwha General Insurance Co., Ltd.	250,000	728,000
Hanwha Investment & Securities Co., Ltd.	691,000	571,000
Total	2,807,658	2,649,184
Less: Present value discounts	(8,429)	(8,326)
Net amount	₩ 2,799,229	₩ 2,640,858

42. Other Liabilities (Financial Business)

Details of other liabilities as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>	2023	2022
VAT payables	₩ 4,607	₩ 10,972
Unearned insurance income	1,380	1,687
Advance receipts and others	225,577	104,119
Total	₩ 231,564	₩ 116,778

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43. Share Capital and Capital Surplus

(1) Share capital as of December 31, 2023 and 2022 is as follows:

<i>(in millions of Korean won and in number of shares)</i>	Number of authorized shares	Number of shares issued	Par value (in Korean won)		2023		2022
Ordinary shares		74,958,735	5,000	₩	374,794	₩	374,794
1 st preferred shares ¹	200,000,000	479,294	5,000		2,396		2,396
3 rd preferred shares ²		22,472,000	5,000		112,360		112,360
	Total			₩	489,550	₩	489,550

¹ The 1st preferred share, which is non-cumulative, is eligible to receive cash dividends, if declared, equal to that declared for ordinary shares plus an additional 1%.

² In October 2016, the Group increased paid-in capital of preferred shares without voting rights (22,472,000 shares).

(2) Capital surplus as of December 31, 2023 and 2022 is as follows:

<i>(in millions of Korean won)</i>		2023		2022
Share premium	₩	342,536	₩	342,536
Revaluation reserve		19,079		19,552
Other capital surplus		993,140		976,048
	Total	₩ 1,354,755	₩	1,338,136

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(3) Share-based payment

1) Certain executives and employees of the Group have been granted restricted stock units ("RSUs") with the resolution of the Board of Directors during the year ended December 31, 2023, and details are as follows:

	Details
Type of shares issued through share option	Ordinary shares of Hanwha Corporation
Total grant amount (in Korean won)	₩ 23,099,005,100
Equity-settled share options	409,748 shares
Equity-linked cash (in Korean won)	₩ 11,549,502,550 (Grant base stock price basis, equivalent to 409,748 shares in total)
Exercise price (in Korean won)	Nil (No exercise price exists under the existing share-based payment plan)
Grant date	February, 2023
Vesting condition	If employees and executives have worked for more than six months in the position in the fiscal year, the RSUs granted will not be adjusted.
Exercisable timing	The effect of payment on RSUs occurs in January 2028 or January 2030, January 2033 depending on each employees and executives, regardless of whether the employees and executives are employed (however, the Company may execute the payment to the executives in case where interim payment condition is satisfied).

Certain executives of the Group have been granted restricted stock units ("RSUs") during the year ended December 31, 2023, and Details are as follows:

	Details
Type of shares issued through share option	Ordinary shares of Hanwha Corporation
Total grant amount (in Korean won)	₩ 1,271,375,600
Equity-settled share options	25,126 shares
Equity-linked cash (in Korean won)	₩ 635,687,800 (Grant base stock price basis, equivalent to 25,126 shares in total)
Exercise price (in Korean won)	Nil (No exercise price exists under the existing share-based payment plan)
Grant date	2023-03-22
Vesting condition	If employees and executives have worked for more than six months in the position in the fiscal year, the RSUs granted will not be adjusted.
Exercisable timing	The effect of payment on RSUs occurs in January 2030 or January 2033 depending on each executives, regardless of whether the executives are employed (however, the Company may execute the payment to the executives in case where interim payment condition is satisfied).

Certain employees of the Group have been granted restricted stock units ("RSUs") during the year

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ended December 31, 2023, and Details are as follows:

	Details
Type of shares issued through share option	Ordinary shares of Hanwha Corporation
Total grant amount (in Korean won)	₩ 58,800,000
Equity-settled share options	1,120 shares
Equity-linked cash (in Korean won)	₩ 29,400,000 (Grant base stock price basis, equivalent to 1,120 shares in total)
Exercise price (in Korean won)	Nil (No exercise price exists under the existing share-based payment plan)
Grant date	2023-04-01
Vesting condition	If employees and executives have worked for more than six months in the position in the fiscal year, the RSUs granted will not be adjusted.
Exercisable timing	The effect of payment on RSUs occurs in January 2028 or January 2031 depending on each employees, regardless of whether the employees are employed (however, the Company may execute the payment to the executives in case where interim payment condition is satisfied).

Certain executives of the Group have been granted restricted stock units ("RSUs") with the resolution of the Board of Directors during the year ended December 31, 2022, and details are as follows:

	Details
Type of shares issued through share option	Ordinary shares of Hanwha Corporation
Total grant amount (in Korean won)	₩ 17,101,698,600
Equity-settled share options	297,939 shares
Equity-linked cash (in Korean won)	₩ 8,550,849,300 (Grant base stock price basis, equivalent to 297,939 shares in total)
Exercise price (in Korean won)	Nil (No exercise price exists under the existing share-based payment plan)
Grant date	2022-01-26
Vesting condition	If employees and executives have worked for more than six months in the position in the fiscal year, the RSUs granted will not be adjusted.
Exercisable timing	The effect of payment on RSUs occurs in January 2029 or January 2032 depending on each executives, regardless of whether the executives are employed (however, the Company may execute the payment to the executives in case where interim payment condition is satisfied).

Certain employees and executives of the Group have been granted restricted stock units ("RSUs") during the year ended December 31, 2022, and details are as follows:

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Type of shares issued through share option	Ordinary shares of Hanwha Corporation
Total grant amount (in Korean won)	₩ 3,776,395,700
Equity-settled share options	70,063 shares
Equity-linked cash (in Korean won)	₩ 1,888,197,850 (Grant base stock price basis, equivalent to 70,063 shares in total)
Exercise price (in Korean won)	Nil (No exercise price exists under the existing share-based payment plan)
Grant date	2022-12-31(Contract date : 2023-02-28)
Vesting condition	If employees and executives have worked for more than six months in the position in the fiscal year, the RSUs granted will not be adjusted.
Exercisable timing	The effect of payment on RSUs occurs in December 2027 or December 2029, December 2032 depending on each employees and executives, regardless of whether the employees and executives are employed (however, the Company may execute the payment to the employees and executives in case where interim payment condition is satisfied).

2) Changes in the number of equity-settled share options and cash-settled share options outstanding for each of the two years in the period ended December 31, 2023 are as follows:

(in shares)	Number of equity-settled share options		Number of cash-settled share options	
	2023	2022	2023	2022
Beginning balance	758,880	390,878	961,511	390,878
Granted	435,994	368,002	435,994	368,002
Effects of a Business Combination	-	-	-	202,631
Ending balance	1,194,874	758,880	1,397,505	961,511
Exercisable at the end of the reporting period	-	-	-	-

The weighted-average remaining contractual maturity of share options outstanding at the end of the reporting period is 7.4 years and the exercise prices are nil per share.

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3) Book amounts of liabilities and intrinsic value recognized in relation to equity-linked cash are as follows:

<i>(in millions of Korean won)</i>		2023		2022
Book amount of liabilities ¹	₩	37,013	₩	24,704
Intrinsic value ²		25,750		25,650

¹ It includes ₩ 5,197 million of book amount of the construction segment that was incorporated through the merger for the year ended December 31, 2022.

² The Group assesses intrinsic value based on the market price of the share which is publicly traded in securities market at the end of every reporting period.

4) Share-based payments recognized as expenses for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>		2023		2022
Equity-settled	₩	13,170	₩	10,390
Cash-settled ¹		12,308		7,476
Total	₩	<u>25,478</u>	₩	<u>17,866</u>

The fair value of equity-settled share options is based on the market price of the shares at the grant date.

¹ The amount of share-based payments for the construction segment, which was incorporated through the merger and recognized as expense for the year ended December 31, is ₩ 243 million.

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44. Capital Adjustment

Details of capital adjustment as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>	2023		2022	
Treasury share ¹	₩	(6,868)	₩	(6,868)
Other capital adjustments		88,166		50,674
Total	₩	81,298	₩	43,806

The number of treasury shares as of December 31, 2023 and 2022 are as follows, and treasury shares do not have voting rights according to the *Commercial Code* of the Republic of Korea.

<i>(in shares)</i>	2023	2022
The number of treasury shares	1,132,437	1,132,437

45. Accumulated Other Comprehensive Income

Details of accumulated other comprehensive income as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>	2023		2022	
Loss on valuation of debt instruments at fair value through other comprehensive income	₩	(1,637,065)	₩	(3,573,229)
Loss on valuation of equity instruments at fair value through other comprehensive income		(460,829)		(400,729)
Gain on valuation of financial liabilities designated at fair value through profit or loss (self-credit)		8		47
Gain (loss) on valuation of investment in associates		(266,279)		45,874
Loss on valuation of derivatives qualifying cash flow hedge		(213,170)		(405,824)
Loss on overseas business translation		(85,000)		(95,284)
Accumulated financial insurance gain and loss (original insurance)		2,282,439		3,999,858
Surplus on revaluation of assets		1,644,392		1,589,877
Accumulated financial insurance gain and loss (reinsurance)		1,813		7,556
Total	₩	1,266,309	₩	1,168,146

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46. Retained Earnings

Details of retained earnings as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>	2023	2022
Legal reserves ¹	₩ 86,900	79,500
Discretionary reserves	1,217,800	1,217,800
Retained earnings before appropriation	6,294,423	6,476,229
Total	₩ 7,599,123	7,773,529

¹ The *Commercial Code* of the Republic of Korea requires the Group to appropriate for each financial period, as a legal reserve, an amount equal to a minimum of 10% of cash dividends paid until such reserve equals 50% of its issued share capital. The reserve is not available for cash dividends payment, but may be transferred to share capital or used to offset accumulated deficit in accordance with a resolution of the shareholders' meeting.

47. Revenue

(1) Details of non-financial business's revenue for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>	2023	2022
Products and merchandise	₩ 19,340,360	₩ 19,794,909
Construction	8,220,790	6,599,694
Service and others	2,761,678	2,173,667
Total	₩ 30,322,828	₩ 28,568,270

(2) Details of financial business's revenue for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>	2023	2022
Insurance operation income	₩ 10,412,494	₩ 9,647,494
Insurance finance income	20,439	1,858,205
Commission income	319,421	328,168
Investment operation income	11,050,497	9,717,119
Other financial income	1,009,134	767,475
Total	22,811,985	22,318,461

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(3) Details of financial business's operating income from insurance for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>		2023		2022
Insurance	₩	4,499,786	₩	4,311,486
Insurance contract income		1,289,886		1,205,352
Contract income		1,059,620		783,484
Contract maintenance income		695,536		676,299
Claim handling income		132,998		124,567
Property management income		117,440		119,382
Reinsurance contract income		619,034		626,323
Other insurance income		1,998,194		1,800,601
Total		<u>10,412,494</u>		<u>9,647,494</u>

(4) Details of financial business's operating income from investment for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>		2023		2022
Interest income	₩	3,813,595	₩	3,412,701
dividend income		275,440		337,192
Gain on disposal and valuation of securities		3,161,031		1,454,714
Gain on disposal and valuation of derivatives		2,795,124		3,042,116
Gain on foreign currency transaction		367,032		460,862
Other investment income		638,275		1,009,534
Total	₩	<u>11,050,497</u>	₩	<u>9,717,119</u>

48. Cost of Sales

(1) Details of non-financial business's cost of sales for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>		2023		2022
Products and merchandise	₩	14,956,852	₩	15,399,804
Construction		8,321,890		5,837,341
Service and others		1,976,725		2,499,267
Total	₩	<u>25,255,467</u>	₩	<u>23,736,412</u>

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(2) Details of financial business's cost of sales for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>		2023		2022
Insurance operation expenses	₩	9,484,941	₩	8,446,492
Insurance finance expenses		4,763,201		2,972,618
Commission cost		39,373		44,301
Investment operation expenses		6,663,765		9,461,216
Other financial expenses		528,328		426,084
Total		<u>21,479,608</u>		<u>21,350,711</u>

(3) Details of financial business's operating expense from insurance for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>		2023		2022
Claims	₩	5,774,829	₩	5,156,272
Insurance contract expenses		1,192,454		873,245
Contract maintenance expenses		826,817		578,297
Claim handling expenses		213,205		204,358
Property management expenses		92,466		99,125
Reinsurance contract expenses		727,948		824,796
Other insurance expenses		657,222		710,399
Total		<u>9,484,941</u>		<u>8,446,492</u>

(4) Details of financial business's operating expense from investment for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>		2023		2022
Interest cost	₩	500,868	₩	300,004
Loss on disposal and valuation of securities		1,542,217		3,751,534
Loss on disposal and valuation of derivatives		3,390,567		4,197,707
Loss on disposal and valuation of loans		166,888		22,428
Loss on foreign currency transaction		307,060		488,864
Other investment expenses		756,165		700,679
Total	₩	<u>6,663,765</u>	₩	<u>9,461,216</u>

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49. Selling and Administrative Expenses

Details of selling and administrative expenses for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>	2023		2022	
Salaries	₩	1,447,045	₩	1,163,204
Impairment loss		22,601		13,626
Freight and storage expenses		375,089		341,406
Commission expenses		281,113		323,674
Depreciation		186,312		153,670
Amortization		114,842		67,981
Depreciation of right-of-use assets		63,799		28,343
Employee benefits		197,819		160,415
Post-employment benefits		131,268		102,491
Sales commission expenses		33,216		47,045
Advertising expenses		128,957		107,559
Taxes and dues		70,825		70,671
Entertainment expenses		27,865		23,482
Transportation fees		73,721		57,714
Outsourcing fees		40,759		83,056
Overseas branch maintenance fees		2,605		2,057
Others		789,982		683,576
Total	₩	<u>3,987,818</u>	₩	<u>3,429,970</u>

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50. Breakdown of Expenses by Nature

Details of expenses by nature for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>	2023		2022	
Changes in inventories ¹	₩	(816,485)	₩	(1,245,925)
Raw materials and supplies used		19,636,135		15,376,700
Merchandise purchased		2,391,021		3,232,770
Salaries and wages ²		4,166,664		3,771,000
Employee benefits		622,899		597,340
Rental expenses		55,862		55,806
Depreciation of property, plant and equipment		1,088,831		972,802
Amortization		234,614		202,267
Depreciation of right-of-use assets		230,188		182,035
Taxes and dues		183,407		360,228
Research and development expenses		62,147		149,336
Original premium expenses		8,219,144		6,949,262
Other expenses		14,648,466		17,913,472
Total	₩	<u>50,722,893</u>	₩	<u>48,517,093</u>

¹ Changes in raw materials and supplies are excluded.

² Post-employment benefits are included.

51. Other Income and Expenses

(1) Details of other income for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>	2023		2022	
Gain on foreign currency transaction and translation	₩	802,214	₩	1,042,774
Gain on transaction of derivatives		103,517		132,941
Gain on valuation of derivatives		850,871		197,893
Gain on valuation of financial assets measured at fair value through profit or loss		92,195		25,981
Gain on disposal of financial assets measured at fair value through profit or loss		180,720		-
Gain on disposal of investments in associates		31,573		241,583
Gain on valuation of fair value of investment property		174,971		440,453
Others		170,238		364,565
Total	₩	<u>2,406,299</u>	₩	<u>2,446,190</u>

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(2) Details of other expenses for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>		2023		2022
Loss on foreign currency transaction and translation	₩	758,890	₩	1,161,229
Loss on transaction of derivatives		106,881		82,015
Loss on valuation of derivatives		106,392		210,096
Loss on valuation of financial assets measured at fair value through profit or loss		44,472		88,462
Loss on disposal of financial assets measured at fair value through profit or loss		34		22
Loss on disposal of financial assets measured at fair value through other comprehensive income		353		164
Loss on disposal of financial assets at amortized cost		12,791		6,826
Loss on disposal of investments in associates		60,795		61,379
Loss on valuation of fair value of investment property		44,782		189,434
Others		821,678		375,612
Total	₩	<u>1,957,068</u>	₩	<u>2,175,239</u>

52. Finance Income and Costs

(1) Details of finance income for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>		2023		2022
Interest income according to the effective interest rate method				
Financial assets at amortized cost and others	₩	7,796	₩	5,712
Interest income - others				
Cash and cash equivalents, advance deposit and others		181,361		72,628
Financial assets at amortized cost and others		8,889		15,077
Interest income of lease		133		74
Others		25,645		15,400
Dividend income		15,052		7,903
Total	₩	<u>238,876</u>	₩	<u>116,794</u>

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(2) Details of finance costs for each of the two years in the period ended December 31, 2023 are as follows:

1) Finance costs (interest expense)

<i>(in millions of Korean won)</i>		2023		2022
Interest expense				
Borrowings and debentures	₩	804,518	₩	453,682
Others		154,106		85,428
Loss on valuation of liabilities attributable to non-controlling interest		(2,414)		(1,020)
		<u>956,210</u>		<u>538,090</u>
Less: Amounts on qualifying assets capitalized ¹		<u>(78,317)</u>		<u>(17,197)</u>
Total	₩	<u>877,893</u>	₩	<u>520,893</u>

¹ During the year ended December 31, 2023, the Group has capitalized borrowing costs on qualifying assets. The capitalization rate of borrowings used to determine the amount of borrowing costs to be capitalized is as follows:

<i>(in interest rate %)</i>	2023	2022
The capitalization rate	3.82 ~ 5.87	2.52 ~ 5.30

2) Finance costs (amortization expense on financial liabilities)

<i>(in millions of Korean won)</i>		2023		2022
Amortization expense on financial liabilities	₩	24,994	₩	26,552

53. Income Tax Expense

(1) The income tax expense for each of the two years in the period ended December 31, 2023 consists of the following

<i>(in millions of Korean won)</i>		2023		2022
Current tax:				
Current tax on profits for the year	₩	382,587	₩	1,414,796
Adjustments in respect of prior years		-		4,056
Total current tax		<u>382,587</u>		<u>1,418,852</u>
Deferred tax:				
Increase (decrease) of temporary differences		63,702		225,165
Total deferred tax		<u>63,702</u>		<u>225,165</u>
Income tax effect charged directly to equity		164,812		(1,519,060)
Income tax expense	₩	<u>611,101</u>	₩	<u>124,957</u>

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(2) The income taxes charged or credited directly to equity for each of the two years in the period ended December 31, 2023 are as follows:

(in millions of Korean won)	2023			2022		
	Before tax	Tax effect	After tax	Before tax	Tax effect	After tax
Gain (loss) on valuation of financial assets at fair value through other comprehensive income	₩ 4,085,553	₩ (1,074,675)	₩ 3,010,878	₩ (9,928,764)	₩ 2,495,318	₩ (7,433,446)
Gain (loss) on valuation of investments in associates	19,048	2,244	21,292	190,232	(1,998)	188,234
Gain (loss) on valuation of derivatives qualifying cash flow hedge	573,821	(151,435)	422,386	(890,344)	214,511	(675,833)
Gain (loss) on overseas business translation	73,497	(18,546)	54,951	19,366	5,329	24,695
Remeasurements of the net defined benefit liability	(147,096)	43,596	(103,500)	191,726	(62,475)	129,251
Gain (loss) on insurance finance	(5,266,758)	1,381,865	(3,884,893)	12,128,197	(3,106,401)	9,021,796
Gain (loss) on valuation of financial liabilities at fair value through profit or loss (credit risk fluctuation)	(239)	61	(178)	(203)	82	(121)
Surplus on revaluation of assets	144,225	(18,297)	125,928	4,080,179	(1,063,424)	3,016,755
Total	₩ (517,949)	₩ 164,813	₩ (353,136)	₩ 5,790,389	₩ (1,519,058)	₩ 4,271,331

(3) An explanation of the relationship between income tax expense and profit before tax for each of the two years in the period ended December 31, 2023 is as follows:

(in millions of Korean won)	2023	2022
Profit before tax	₩ 2,246,616	₩ 2,133,918
Tax calculated at domestic tax rates applicable to profits in the respective countries	582,745	576,466
Adjustments:		
Income not subject to tax	(28,236)	(89,391)
Expenses not deductible for tax purposes	22,696	53,030
Tax credit and tax reduction	(22,314)	(16,022)
Impact of change in tax rate	(4,048)	(5,955)
Others	60,258	(393,171)
Income tax expense	₩ 611,101	₩ 124,957
Effective tax rate	27.20%	5.86%

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(4) The movements in deferred tax assets and liabilities for each of the two years in the period ended December 31, 2023 are as follows:

(in millions of Korean won)

	2023				
	Beginning	Profit or loss	Other comprehensive income	Others	Ending
Trade receivables	₩ 357,815	₩ 26,060	₩ -	₩ -	₩ 383,875
Accumulated deficit and others	34,587	75,974	-	-	110,561
Appropriated retained earnings	(765,520)	(1,708,355)	1,381,863	-	(1,092,012)
Inventories	10,584	9,232	-	-	19,816
Securities	(825,933)	1,256,039	(1,074,675)	-	(644,569)
Revaluation reserve	452,183	126,569	-	-	578,752
Accrued income	(88,047)	(26,268)	-	-	(114,315)
Investments in subsidiaries and others	(1,262,251)	(169,314)	37,943	-	(1,393,622)
Investment property	(205,382)	(35,725)	-	-	(241,107)
Surplus on revaluation of assets	(1,063,424)	-	(18,297)	-	(1,081,721)
Others	750,853	217,274	(162,022)	36,597	842,702
Total	₩ (2,604,535)	₩ (228,514)	₩ 164,812	₩ 36,597	₩ (2,631,640)

(in millions of Korean won)

	2022				
	Beginning	Profit or loss	Other comprehensive income	Others	Ending
Trade receivables	₩ 329,604	₩ 29,508	₩ -	₩ (1,297)	₩ 357,815
Accumulated deficit and others	95,270	(60,683)	-	-	34,587
Appropriated retained earnings	(464,642)	2,805,524	(3,106,402)	-	(765,520)
Inventories	27,919	(17,335)	-	-	10,584
Securities	541,210	(3,862,461)	2,495,318	-	(825,933)
Revaluation reserve	(185,434)	637,617	-	-	452,183
Accrued income	(54,341)	(33,710)	-	4	(88,047)
Gain on business split-off	(38,198)	38,198	-	-	-
Investments in subsidiaries and others	(1,617,497)	800,308	88,929	(533,991)	(1,262,251)
Investment property	(148,743)	(56,639)	-	-	(205,382)
Surplus on revaluation of assets	-	-	(1,063,424)	-	(1,063,424)
Others	(402,202)	1,013,568	66,519	72,968	750,853
Total	₩ (1,917,054)	₩ 1,293,895	₩ (1,519,060)	₩ (462,316)	₩ (2,604,535)

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(5) Details of deductible (taxable) temporary differences not recognized as deferred tax as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>		2023		2022
Investment in subsidiaries and associates ¹	₩	3,286,765	₩	1,921,761
Unused losses ²		228,980		184,352
Others		205,748		189,704

¹ Temporary differences for investments in subsidiaries and associates that are not probable to be reversed.

² The maturity of unused losses is as follows:

<i>(in millions of Korean won)</i>	2023
2024	₩ 100
2025	2,294
2026	114
2027	133
2028	26
2029	115
After 2031	226,198

54. Earnings per Share

(1) Profits attributable to ordinary shares and 1st preferred shares for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>		2023		2022
Profit for the year	₩	380,490	₩	1,174,434
Dividend to third preferred share		(89,208)		(287,989)
Profit attributable to ordinary shares and first preferred shares	₩	291,282	₩	886,445

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(2) Basic earnings per share for each of the two years in the period ended December 31, 2023 are as follows: Basic earnings per share are calculated by dividing the profit attributable to equity holders of the Group by the weighted-average number of ordinary shares outstanding during the financial year excluding treasury shares.

(in millions of Korean won)

	2023		2022	
	Ordinary shares	1 st preferred shares ¹	Ordinary shares	1 st preferred shares ¹
Profit attributable to equity holders of the Group	₩ 289,379	₩ 1,903	₩ 880,303	₩ 6,142
Weighted-average number of ordinary shares in issue ²	73,826,298	479,294	68,959,910	479,294
Basic earnings per share (in Korean won)	₩ 3,920	₩ 3,970	₩ 12,765	₩ 12,815

¹ Preferred shares were issued under the former *Commercial Code* before amendments in 1997. These preferred shares hold the same priority as ordinary shares in terms of dividends payout and distribution of residual properties, thus earnings per share were calculated accordingly. Dividends are paid by adding 1% of par value of ordinary shares to dividends per ordinary shares.

² There were changes in the weighted average number of outstanding shares due to the disposal of 5,138,441 treasury shares in 2022.

(3) The calculation of diluted earnings per share for each of the two years in the period ended December 31, 2023 is as follows. Diluted earnings per share are calculated by adjusting the weighted average number of ordinary shares outstanding to assume conversion of all dilutive potential ordinary shares.

(in millions of Korean won)

	2023		2022	
	Ordinary shares	1 st preferred shares ¹	Ordinary shares	1 st preferred shares ¹
Profit attributable to equity holders of the Company	₩ 290,477	₩ 1,880	₩ 882,703	₩ 6,092
Weighted-average number of ordinary shares in issue ²	75,021,172	479,294	69,718,790	479,294
Diluted earnings per share (in Korean won)	₩ 3,872	₩ 3,922	₩ 12,661	₩ 12,711

¹ Preferred shares were issued under the former *Commercial Code* before amendments in 1997. These preferred shares hold the same priority as ordinary shares in terms of dividends payout and distribution of residual properties, thus earnings per share were calculated accordingly. Dividends are paid by adding 1% of par value of ordinary shares to dividends per ordinary shares.

² In 2023 and 2022, dilutive potential ordinary shares include share options. The number of shares arising from the share option is calculated based on the number of shares that could have been acquired at fair value (determined as the average market price for the year) based on the monetary value of the subscription rights attached to outstanding share options. The number of shares calculated as above is compared with the number of shares that would have been issued assuming the share options are exercised.

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55. Related Party Transactions

(1) The Group's related parties as of December 31, 2023 are as follows:

Classification	Name of entity
Associates and joint venture	Yeochoon NCC Co., Ltd., Hanwha Impact Co., Ltd. (formerly, Hanwha General Chemical Co., Ltd.), Gulf Advanced Cables Insulation Company and others
Large-scale business group affiliates ¹	Hanwha Energy Corporation, Hanwha Total Energies Petrochemical Co., Ltd. and others

¹ A large-scale business group affiliate (other related parties) does not correspond to the related parties defined in paragraph 9 of KIFRS 1024. However, the large-scale business group affiliates as designated by the Fair Trade Commission is company classified as a related party in accordance with the resolution of the Securities and Futures Commission and in accordance with the substantive relationship stipulated in paragraph 10 of KIFRS 1024.

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(2) Details of receivables and payables with the related parties, including large-scale business group affiliates, as of December 31, 2023 and 2022 are as follows:

(in millions of Korean won)

	2023					
	Receivables ¹			Payables		
	Trade receivables	Other receivables	Loans ²	Trade payables	Other payables	
Associates and joint venture						
Ulsan Compelx City Development Co., Ltd.	₩ 8,629	₩ 12	₩ 6,000	₩ -	₩ -	
KB Busan Osiria Hotel REITs	-	1,800	-	-	23,084	
HANA TRUST REIT FIVE CO., Ltd.	-	1,080	-	-	14,328	
Gulf Advanced Cables Insulation Company	-	6,009	16,216	-	-	
International Polymers Company	-	2,005	-	24,114	-	
OVERAIR, INC. ³	-	770	190,084	-	-	
LAMBDA256 CO., LTD. ³	-	26,466	-	-	-	
Yechun NCC Co., Ltd.	5,062	399	-	303,348	40,745	
LUXROBO CO., LTD. ³	-	10,549	-	-	-	
Hanwha Ocean Co., Ltd.	5,359	362	-	87,362	179,777	
Hanwha Impact Co., Ltd.	5,661	106	-	2,217	44,028	
Others	4,481	19,902	149,983	5,861	8,066	
Large-scale business group affiliates						
174 Power Global, LLC	-	-	-	113,615	-	
Hanwha 174 PG JV Holdings, LLC	-	-	-	26,304	-	
Hanwha Energy USA Holdings Corporation	546	-	-	95,658	-	
Hanwha Energy Co., Ltd.	790	20	-	23,569	4,074	
Hanwha Total Energies Petrochemical Co., Ltd.	9,736	678	-	5,619	183,122	
Hanwha Power Systems Co., Ltd.	2,066	1,989	-	5,209	24,908	
Hanwha Ocean Engineering Co., Ltd. (Shandong)	-	-	25,318	-	-	
Others	7,750	251	-	420	5,109	
Total	₩ 50,080	₩ 72,398	₩ 387,601	₩ 693,296	₩ 527,241	

¹ As of December 31, 2023, the Group recognized provision for impairment on receivables of related parties amounting to ₩ 19,965 million.

² Accrued revenue for the loan is included.

³ Convertible bonds and redeemable convertible preferred shares are included.

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(in millions of Korean won)

	2022					
	Receivables ¹			Payables		
	Trade receivables	Other receivables	Loans ²	Trade payables	Other payables	
Associates and joint venture						
KB Busan Osiria Hotel REITs	₩ -	₩ 1,800	₩ -	₩ -	₩ 25,044	
HANA TRUST REIT FIVE CO., Ltd.	-	1,080	-	-	16,123	
Gulf Advanced Cables Insulation Company	-	2,807	16,216	-	-	
International Polymers Company	-	2,231	-	28,197	-	
OVERAIR, INC. ³	-	-	188,995	-	-	
LAMBDA256 CO., LTD. ³	-	36,313	-	-	-	
Yeocheon NCC Co., Ltd.	4,615	1,536	-	229,018	41,067	
LUXROBO CO., LTD. ³	-	12,658	-	-	-	
Hanwha Impact Co., Ltd.	6,116	115	-	1,672	50,675	
Others	4,898	22,898	163,235	2,157	8,905	
Large-scale business group affiliates						
Hanwha Energy Corporation Japan	8	48	8,579	-	56	
Hanwha Energy USA Holdings Corporation	758	142	-	-	-	
Hanwha Energy Co., Ltd.	1,816	11	-	20,413	5,158	
Hanwha Total Energies Petrochemical Co., Ltd. (formerly, Hanwha Total Petrochemical Co., Ltd.)	6,353	6,183	-	24,365	186,987	
Hanwha Power Systems Co., Ltd.	56	3,014	-	2,846	15,833	
Others	258	867	1,867	4,335	732	
Total	₩ 24,878	₩ 91,703	₩ 378,892	₩ 313,003	₩ 350,580	

¹ As of December 31, 2022, the Group recognized provision for impairment on receivables of related parties amounting to ₩ 19,965 million.

² Accrued revenue for the loan is included.

³ Convertible bonds and redeemable convertible preferred shares are included.

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(3) Sales and purchases with the related parties, including large-scale business group affiliates, for each of the two years in the period ended December 31, 2023 are as follows:

(in millions of Korean won)

	2023			
	Sales and others		Purchases and others	
	Sales	Other income	Purchases	Other expenses
Associates and joint venture				
Deokyang Energen Corporation ¹	₩ 40,588	₩ -	₩ 8,709	₩ 149
Sermatech Korea Co., Ltd. ²	18	634	16,792	8
Ulsan Complex City Development Co., Ltd.	7,844	12	-	-
KB Busan Osiria Hotel REITs	-	-	3,250	-
International Polymers Company ³	-	-	188,816	-
OVERAIR, INC.	-	5,747	-	-
P&W NGPF Manufacturing company Singapore.Ltd ³	163	279	50,954	-
Marston No.141 Yongin Baekam PFV Co., Ltd.	22,987	384	-	-
YANGJU ECOTECH Co., Ltd.	8,176	-	-	-
A&D Credit Information Co., Ltd.	3	-	8,338	-
Yeochoon NCC Co., Ltd.	49,725	3	1,764,611	646
Hanwha Ocean Co., Ltd.	39,749	5	123	320
Hanwha Impact Co., Ltd.	55,323	2	19,359	1,882
Others ⁴	29,812	3,465	3,882	2
Large-scale business group affiliates				
174 Power Global, LLC	-	-	-	115,787
BHS Solar, LLC	14,309	65	-	-
Hanwha 174 PG JV Holdings, LLC	-	-	-	30,395
Hanwha Energy USA Holdings Corporation	666	209	120,094	1,165
Hanwha Q CELLS Australia Pty Ltd.	28,345	-	1,160	1,039
Hanwha Energy Corporation ⁵	15,519	2	244,716	232
Hanwha Total Energies Petrochemical Co., Ltd.	138,361	7	185,301	219
Hanwha Power Systems Co., Ltd.	6,834	1,631	14,659	855
Others ⁶	5,126	1,160	965	1,822
Total	₩ 463,548	₩ 13,605	₩ 2,631,729	₩ 154,521

¹ Dividends of KRW 45 million were received from Deokyang Energen Co., Ltd. for the year ended December 31, 2023.

² Dividends of KRW 2,816 million were received from SummerTech Korea Co., Ltd. for the year ended December 31, 2023.

³ Dividends of KRW 50,372 million were received from International Polymers Company for the year ended December 31, 2023.

⁴ Dividends of KRW 4,201 million were received from KoreaRasLaffan LNG, KRW 139 million from Hana Trust No.5 Entrusted Real Estate Investment Company, and KRW 109 million from KB Busan Ocean Hotel Entrusted Real Estate Investment Company for the year ended December 31, 2023.

⁵ Dividends of KRW 12,434 million were paid to Hanwha Energy Co., Ltd., a large-scale business group affiliates, in accordance with IFRS standards for the year ended December 31, 2023.

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	2022			
	Sales and others		Purchases and others	
	Sales	Other income	Purchases	Other expenses
Associates and joint venture				
DEOKYANG ENERGEN CORPORATION	₩ 25,152	₩ -	₩ 2,082	₩ 13
Sermatech Korea Co., Ltd. ¹	22	647	17,921	195
KB Busan Osiria Hotel REITs	-	21,102	1,625	-
International Polymers Company ²	-	-	238,825	-
P&W NGPF Manufacturing company Singapore.Ltd ³	-	7,549	44,747	-
Singapore PTE. LTD. ³	-	-	-	-
Marston No.141 Yongin Baekam PFV Co., Ltd.	6,193	-	-	-
A&D Credit Information Co., Ltd.	4	-	8,813	-
Yechun NCC Co., Ltd.	56,559	4	2,135,408	613
Daehan 5 Newstay Consignment Managemnet real estate Investment Co., Ltd.	53	-	10	-
Hanwha Impact Co., Ltd.	67,946	214	34,658	1,440
Others ⁴	13,644	10,993	2,288	819
Large-scale business group affiliates				
Hanwha Energy USA Holdings Corporation	444	-	-	185
Daesan Green Energy Co. Ltd.	296	-	-	-
Hanwha Energy Corporation ⁵	15,519	2	187,923	106
HANWHA CONVERGENCE CO., LTD.	2,620	-	-	819
Hanwha Total Energies Petrochemical Co., Ltd. (formerly, Hanwha Total Petrochemical Co., Ltd.)	186,751	1,270	289,115	73
Hanwha Power Systems Co., Ltd.	1,092	381	6,708	340
Others ⁶	2,438	603	5,115	4,276
Total	₩ 378,733	₩ 42,765	₩ 2,975,238	₩ 8,879

¹ Dividends received from Sermatech Korea Co., Ltd. during the year ended December 31, 2022, amount to ₩ 1,851 million.

² Dividends received from International Polymers Company during the year ended December 31, 2022, amount to ₩ 49,379 million.

³ Dividends received from P&W NGPF Manufacturing company Singapore.Ltd during the year ended December 31, 2022, amount to ₩ 8,004 million.

⁴ In addition, dividends received from KoreaRasLaffan LNG, HANA TRUST REIT FIVE CO., Ltd. and Korea-Seoul Life Science Fund during the year ended December 31, 2022, amount to ₩ 5,150 million, ₩ 200 million and ₩ 470 million, respectively.

⁵ Dividends paid to Hanwha Energy Corporation, large-scale business group affiliates, during the year ended December 31, 2022, amount to ₩ 10,259 million.

⁶ Dividends paid to Hanwha Energy Corporation Japan, large-scale business group affiliates, during the year ended December 31, 2022, amount to ₩ 3,248 million.

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(4) Changes in loans to the related parties, including large-scale business group affiliates, for each of the two years in the period ended December 31, 2023 are as follows:

(in millions of Korean won)

		2023						
		Beginning	Increase	Decrease	Others ¹	Ending		
Associates and joint venture								
Gulf Advanced Cables Insulation Company ²	₩	16,216	₩	-	₩	-	₩	16,216
Crystal Solar ²		1,867		-		-		1,867
Wonju Green Corp. ²		1,882		-		-		1,882
OVERAIR, INC.		188,995		-		1,089		190,084
Hanwha Ocean Engineering Co., Ltd. (Shandong)		-		25,318		-		25,318
ULSAN COMPLEX CITY DEVELOPMENT CO.,LTD		-		6,000		-		6,000
RE100 Solar Factory 1 Co., Ltd.		-		238		-		238
Others		161,353		3,790		(18,948)		(199)
Large-scale business group affiliates								
Hanwha Energy Corporation Japan		8,579		-		(8,579)		-

¹ Others include accrued interest income and fluctuation of foreign exchange rate.

² As of December 31, 2023, the Group sets up a full provision against loans.

(in millions of Korean won)

		2022									
		Beginning		Increase		Decrease		Others ¹		Ending	
Associates and joint venture											
Gulf Advanced Cables Insulation Company ²	₩	16,216	₩	-	₩	-	₩	-	₩	16,216	
Crystal Solar ²		1,867		-		-		-		1,867	
Wonju Green Corp. ²		1,882		-		-		-		1,882	
OVERAIR, INC.		35,565		148,155		-		5,275		188,995	
Others		175,923		890		(20,132)		4,672		161,353	
Large-scale business group affiliates											
Hanwha Energy Corporation Japan		11,333		-		(1,982)		(772)		8,579	

¹ Others include accrued interest income and fluctuation of foreign exchange rate.

² As of December 31, 2022, the Group sets up a full provision against loans.

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(5) Changes in lease liabilities for the related parties, including large-scale business group affiliates, for each of the two years in the period ended December 31, 2023 are as follows:

(in millions of Korean won)

	2023					
	Beginning		Changes		Ending	
Associates and joint venture						
HANA TRUST REIT FIVE CO., Ltd.	₩	16,123	₩	(1,796)	₩	14,327
KB Busan Osiria Hotel REITs		25,044		(1,960)		23,084
Yeocheon NCC Co., Ltd.		-		4		4
Large-scale business group affiliates						
Hanwha Energy Co., Ltd.		9		(9)		-

(in millions of Korean won)

	2022					
	Beginning		Changes		Ending	
Associates and joint venture						
HANA TRUST REIT FIVE CO., Ltd.	₩	17,659	₩	(1,536)	₩	16,123
KB Busan Osiria Hotel REITs		-		25,044		25,044
Large-scale business group affiliates						
Hanwha Total Energies Petrochemical Co., Ltd. (formerly, Hanwha Total Petrochemical Co., Ltd.)		67		(67)		-
Hanwha Energy Co., Ltd.		1		8		9

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(6) Equity contributions in cash to related parties for each of the two years in the period ended December 31, 2023 are as follows:

(in millions of Korean won)

	Transaction	Related parties	2023
Associates and joint venture	Capital increase	SP Namyangju Byeollae PFV Inc.	₩ 5,007
		Hanwha Ocean Co., Ltd.	468,837
		Toss Bank Co., Ltd	28,203
		Shinhan AIM Infrastructure Fund 9	300
		Hanwha Venture Capital General Investment Private Fund 4	596
		VIVITY AI INC.	3,390
		Yeongdeok Bluewind Co., Ltd.	780
		KDB Asia Private equity investment	1,582
		Hantu Hanwha Digital Healthcare Fund No. 1	864
		Mirae Asset Global Innovation Growth Fund No. 1	3,000
		Capital decrease	
		SwitchDin Pty Limited,	4,160
		Jeju Eco Energy Co., Ltd.	9
		PT. NANTOY BARA LESTARI	11,604
		Hanwha-Pentastone New Technology Investment Fund 1	800
		KOTAM Airplane Specialized Investment-Type Private Fund 2	117
		Rico ORUM Venture Company Specialized Investment Fund 2	1,998
		Friend New Technology Business Fund 53	569
		DaolNext1LNG Terminal Fund 4	91,592
		KN Secondary Fund 3	500
		Hanwha Global Megatrend EMP Securities Investment Trust (stock-indirect type) C-f	1,020
		Hanwha Solsolhan Korea Bond Securities Investment Trust (Bond) C-f	5,173
		Kellam Tax Equity Partnership, LLC	63,379
		Hashed Venture Investment Fund 1	1,250
		Shinhan AIM Infrastructure Fund 9	510
		YANGJU ECOTECH Co., Ltd.	1,715
		Seven Tree-Hanwha New Technology Business Fund 1	1,500
		Seoul Global Biomedical New Growth Engine Investment Fund	866
		Hantu Hanwha Digital Healthcare Fund 1	1,061

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(in millions of Korean won)

	Transaction	Related parties	2022
Associates and joint venture	Capital increase	AI Alliance LLC	₩ 3,143
		Mirae Asset Global Innovation Growth Fund No. 1	3,000
		VIRNECT CO., LTD.	27
		Shinhan AIM Infrastructure Fund 9	163
		Envisioning Climate Solution Fund	1,500
		KDB Asia Private equity investment	8,636
		Toss Bank Co., Ltd	80,000
		ZIP Fund I, L.P.	7,000
		Premium HiraFu Properties TMK	1,722
		Golden Gate Ventures x Hanwha Growth Fund GP, LLC	204
	Capital decrease	KB Sunjin Asia Real Asset Credit Specialized Investment Private Equity Trust No.1	723
		Shinhan AIM Infrastructure Fund 9	1,495
		Pangyo SD2 Co., Ltd.	6,701
		JR Specialized Investment Private Equity Estate Investment Trust No.15	2,540
		Hanwha Sbi Special Purpose Acquisition Co., Ltd.	10
		KoFC POSCO HANWHA KB Shared Growth No.2. Private Equity Fund	21

(7) Payment guarantees to related parties, including large-scale business group affiliates as of December 31, 2023 are as follows:

(in millions of Korean won and in thousands of US dollars and Japanese yen)

	Guarantee	Guaranteed amount	Purpose of payment guarantee
Associates and joint venture	Burdur Enerji A.S.	USD 9,302	Financial institution borrowings
Large-scale business group affiliates	HW Solar Power 1 G.K.	JPY 245,996	Financial institution borrowings
	HW Solar Power 4 G.K.	JPY 443,337	Financial institution borrowings
	HW Solar Power 7 G.K.	JPY 128,512	Lease guarantee
	HW Solar Power 9 G.K.	JPY 208,217	
	HW Solar Power 10 G.K.	JPY 142,323	
	HW Solar Power 12 G.K.	JPY 826,802	
	HW Solar Power 13 G.K.	JPY 68,658	

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(8) Details of collateral and payment guarantees provided by related parties including large-scale business group affiliates as of December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>	Name of entity	Pledged item	Amount	
Associates and joint venture	HANA TRUST REIT FIVE CO., Ltd.	Beneficiary right of real estate trust	₩	1,296
	KB Busan Osiria Hotel REITs	Beneficiary right of real estate trust		1,800

¹ As of December 31, 2023, the Group is provided with collateral for the purpose of returning the leasehold deposits of HANA TRUST REIT FIVE CO., Ltd. and KB Busan Osiria Hotel REITs.

(9) Details of collateral provided by the Group for the funding sources of related parties as of December 31, 2023, are as follows:

<i>(in millions of Korean won)</i>		Pledged asset	Book amount	Maximum collateral	Mortgagee
Associates and joint venture	Gyungbook Eco, Edu Co., Ltd	Shares	₩ 362	₩ 49,598	Korea BTL Infrastructure Financing Company
	YANGJU ECOTECH Co., Ltd.	Shares	676	74,956	Industrial Bank of Korea
	Ulsan Harbor Bridge Co., Ltd.	Shares	-	345,800	Kookmin Bank and others
	Wonju Green Corp.	Shares	-	24,281	NH Bank and others
	Eagles Energy Co.,Ltd	Shares	4,101	21,301	Consus New Energy Private Fund Special Asset Trust No.1

(10) Details of contingent debt guarantee commitment provided by the Group to related parties in case such related party fails to fulfil its obligation to complete construction as of December 31, 2023, are as follows:

<i>(in millions of Korean won)</i>	Name of entity	Guarantee detail	Amount	
Associates and joint venture	Mastern141YonginBaegamPFV	Acquisition of debt in case of non-fulfillment of obligation	₩	75,822

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(11) As of December 31, 2023, the Group is required to provide funds for the termination payment or shortage of funds required to repay the principal and interest of the loan if the SOC agreement entered into by related party is terminated or the competent authority makes a purchase claim

		Type of business
Associates and joint venture	Gyungbook Eco, Edu Co., Ltd	SOC
	YANGJU ECOTECH Co., Ltd.	SOC
	Wonju Green Corp.	SOC

(12) As of December 31, 2023, Hanwha Energy Co., Ltd., a related party of the Group, holds a preemptive right to purchase from the Group the investment in Tongyeong Eco Power Co., Ltd., including the right to exercise a put option (exercise price: KRW 5,000 per share (par value))

(13) The key management compensation for each of the two years in the period ended December 31, 2023 consists of the following:

<i>(in millions of Korean won)</i>		2023		2022
Salaries and other short-term employee benefits ¹	₩	307,949	₩	297,321
Post-employment benefits		43,333		40,977
Other long-term benefits		615		484

¹ Include cash-settled, equity-settled share-based compensation and stock options amounting to ₩ 69,872 million (₩ 50,776 million in 2022) and ₩ 42,869 million (₩ 34,542 million in 2022), ₩ 466 million, respectively.

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56. Commitment and Contingencies

(1) The outstanding borrowing agreements with banks as of December 31, 2023 are as follows:

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

	Limit	
	Currency	Amount
Bank overdraft	KRW	335,800
	JPY	6,900,000
	THB	30,000
Import-related usance	USD	1,060,500
	EUR	50,000
Export-related D/A, D/P, Local and foreign trade bills	KRW	118,500
	USD	2,145,331
	EUR	297,800
	INR	30,000
	THB	40,000
	PHP	97,815
	KRW	7,408,863
	USD	4,975,773
	EUR	955,824
Other borrowings	JPY	31,700,000
	CNY	1,230,000
	THB	140,000
	CZK	127,475
	MYR	824,544
	AUD	80,000
	MXN	84,468

(2) As of December 31, 2023, 5 blank promissory notes and 17 blank checks have been provided as collaterals.

(3) Other agreements as of December 31, 2023 and 2022, are as follows:

(in millions of Korean won)

	2023		2022	
Loan agreement	₩	2,867,540	₩	2,956,718
Contribution agreement		9,671,247		4,836,492
Total	₩	12,538,787	₩	7,793,210

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(4) Payment guarantees provided for others (other than related parties) as of December 31, 2023, are as follows:

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

Guarantees received	Breakdown of guarantee	Amount	
Operation developers	Developer's lot sale guarantee	KRW	3,714,442
Competent authorities of private business places and others	Performance guarantee	KRW	355,660
Commercial banks	Payment guarantee and others	KRW	37,882
Zia Guclu	Payment guarantee	USD	68,577
Competent city and relevant government office	Deposits guaranteed for restoration due to forest conversion and others	KRW	23,235
PARIS CROISSANT CO., LTD.	Performance guarantee	KRW	500

¹ The maximum exposure to credit risk is identical to the maximum amount of guarantee provided as of December 31, 2023.

² The Group has provided financial guarantee and others for related parties as of December 31, 2023 (Note 51).

In addition to above guarantees, the Company invested in 2nd Seohaean Expressway and 52 investees for private sector investment projects and environmental water-treatment projects under the Act on private Investment for Social Overhead Capital. As of December 31, 2023, the Company provides financial assets at fair value through profit or loss of KRW 89,641,121 thousand and financial assets at fair value through profit or loss in 5 investee companies including Construction Guarantee Cooperative of KRW 42,391,762 thousand as the right of pledge. Further, the Company investments in associates of KRW 1,052,109 thousand as the right of pledge to the lenders of investees for 7 subsidiaries and associates' investment stocks. Also, provides financial assets at fair value through other comprehensive income of ShinYoung Portu co., Ltd of KRW 2,000,000 thousand as the right of pledge.

(5) On August 19, 2021, the Group obtained the control by acquiring 100% shares of WOS Inc. from Wave Electronics Co., Ltd. In relation to the transfer consideration, an additional earn-out clause amounting to ₩ 40 billion is included, and the Group will pay the amount in installments up to ₩40 billion from 2024 to 2026 when the order and sales targets are achieved.

(6) The Group obtained the control by acquiring 66% shares of Sunergetic Holding B.V., and entered into an Earn-out payment agreement that allows additional payments to be made depending on operating performance incurred during a specific period (2023-2025) of the target company. Earn-out consideration recognized at the time of initial acquisition is 4 million euros, and may vary from 70% to 120% depending on the performance achievement rate in the future. The final payment for Earn-out consideration is scheduled for March 2026.

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(7) As of December 31, 2023, the Group guarantees a compensation for damages to Bayerische Motoren Werke AG ("BMW") and its affiliates for losses that may be incurred to BMW due to a breach of the Group's contractual obligations in the course of transactions with BMW. The guarantee period is 15 years from the date of submission of the guarantee to the date of the last order under the last project contract with BMW, and the guaranteed amount is unlimited.

(8) As of December 31, 2023, the Group guarantees Mercedes Benz AG a limit of EUR 30,000,000 for damages due to non-fulfillment of the Group's contractual supply that may occur in commercial transactions

(9) The Group acquired a stake of 20 billion won in the consignment manager real estate investment company of KORAMCO VALUE-INVEST REAL ESTATE NO.3-2 JA-REIT and is obligated to preserve the loss from the sale by limiting the investment amount to 20 billion won in the event of a loss caused by the sale of the sold real estate to a third party.

(10) As of December 31, 2023, the Group assumes obligations including performance guarantee of constructing a solar thermal power station and construction warranty for TACE Inc. and others.

(11) Credit guarantees and payment guarantees provided to others on construction business

1) Real Estate PF Summary Table (excluding responsibility for completion, progress payments, excluding SOC)

As of December 31, 2023, the Company has provided a total of KRW 958,207 million (KRW 352,941 million in 2022) in credit enhancement related to PF, of which KRW 781,773 million (KRW 229,648 million in 2022) is for projects solely undertaken by the Company, and KRW 176,434 million (KRW 123,293 million in 2022) is for projects in which the Company participates as a consortium member. The credit enhancement provided to related parties totals KRW 391,900 million (2022: KRW -), all of which is related to other businesses.

As of December 31, 2022, it has been recorded as a contingent liability, but no amount has been converted into a provision.

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- Independent projects

(in millions of Korean won)

		Loan balance													
	Types	Guarante Limit		Guarantee Amounts		For the year ended December 31, 2023	Within 3 months	Over 3 months but within 6 months	Maturity classification			Over 3 years	for the year ended December 31, 2022		
		W	-	W	-	W	-	W	-	W	-	W	-		
Maintenance project	Bridge loan														
	Main PF	513,519		213,261		180,304		-	111,128		-	30,779	22,877	15,519	146,393
		513,519		213,261		180,304		-	111,128		-	30,779	22,877	15,519	146,393
Other business	Bridge loan	513,040		370,940		367,100		46,000	19,200		301,900	-	-	-	-
	Main PF	201,200		197,572		187,812		182,812	-		5,000	-	-	-	48,400
		714,240		568,512		554,912		228,812	19,200		306,900	-	-	-	48,400
Total		1,227,759		781,773		735,216		228,812	130,328		306,900	30,779	22,877	15,519	194,793

- Projects participated in as a consortium (total)

(in millions of Korean won)

		Loan balance																			
		Guarantee Limit		Guarantee Amounts		For the year ended December 31, 2023		Within 3 months	Maturity classification								Over 3 years	For the year ended December 31, 2022			
Types									Over 3 months but within 6 months	Over 6 months but within 12 months	Over 1 year but within 2 years	Over 2 years but within 3 years									
Maintenance project	Bridge loan	₩	-	₩	-	₩	-	₩	-	₩	-	₩	-	₩	-	₩	-	₩	-	₩	-
	Main PF	241,418		132,434		111,099		-		-		-		-		6,470		104,629		104,238	
		₩	241,418	₩	132,434	₩	111,099	₩	-	₩	-	₩	-	₩	-	₩	6,470	₩	104,629	₩	104,238
Other business	Bridge loan	₩	44,000	₩	44,000	₩	44,000	₩	-	₩	-	₩	44,000	₩	-	₩	-	₩	-	₩	-
	Main PF	-		-		-		-		-		-		-		-		-		-	
		₩	44,000	₩	44,000	₩	44,000	₩	-	₩	-	₩	44,000	₩	-	₩	-	₩	-	₩	-
		₩	285,418	₩	176,434	₩	155,099	₩	-	₩	-	₩	44,000	₩	-	₩	6,470	₩	104,629	₩	104,238

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- Consortium participation (Company's share)

(in millions of Korean won)

Types		Guarantee Limit		Guarantee Amounts		For the year ended December 31, 2023		Loan balance												For the year ended December 31, 2022	
								Maturity classification													
								Within 3 months	Over 3 months but within 6 months	Over 6 months but within 12 months	Over 1 year but within 2 years	Over 2 years but within 3 years	Over 3 years								
Maintenance project	Bridge loan	W	-	W	-	W	-	W	-	W	-	W	-	W	-	W	-	W	-	W	-
	Main PF	209,890		120,718		100,931		-		-		-		-		2,588		98,343		92,493	
	W	209,890	W	120,718	W	100,931	W	-	W	-	W	-	W	-	W	2,588	W	98,343	W	92,493	
Other business	Bridge loan	W	44,000	W	44,000	W	44,000	W	-	W	-	W	44,000	W	-	W	-	W	-	W	-
	Main PF	-		-		-		-		-		-		-		-		-		-	
	W	44,000	W	44,000	W	44,000	W	-	W	-	W	44,000	W	-	W	-	W	-	W	-	
	W	253,890	W	164,718	W	144,931	W	-	W	-	W	44,000	W	-	W	2,588	W	98,343	W	92,493	

2) Real Estate PF (Loan) Guarantee Detailed Information

- As of December 31, 2023, the current guarantee details for 15 maintenance project-related PF (loans) are as follows:

(in millions of Korean won)

Business area	Business segment	Types of PF	Type of credit enhancement	Guarantee limit (total)	Burd en rate	Guaran tee amount	Debtor		Type of creditor institution	Loan balance		Loan period	(Liqu idation) Maturity	Type s	Contra ctual comple tion liability amount
							Borrower classification	Related Party Status		For the year ended Decmeber 31, 2023	For the year ended Decmeber 31, 2022				
Incheon Metropolitan City	Condominium	Main PF	Joint guarantee	324,000	100%	133,354	Maintenance project association	X	the Lenders	111,128	125,879	21.10~'24.06	2024. 06.13	PF Loan	270,000
	Reasons for Expiry of Rights		In the event of non-payment of the guaranteed amount, the bankruptcy of the borrower or contractor, cancellation of business-related permits, or significant violations of regulations by the borrower.												
	Others														
Busan Metropolitan City	Condominium	Main PF	Joint guarantee	90,000	100%	36,935	Maintenance project association	X	Bank, specialized financial institution	30,779	-	23.06~'25.11	2025. 11.24	PF Loan	75,000
	Reasons for Expiry of Rights		In the event of non-payment of the guaranteed amount, the bankruptcy of the borrower or contractor, cancellation of business-related permits, or significant violations of regulations by the borrower.												
	Others														
Busan Metropolitan City	Condominium	Main PF	Joint guarantee	75,600	100%	19,053	Maintenance project association	X	Bank, specialized financial institution	15,877	-	23.10~'26.08	2026. 08.30	PF Loan	-
	Reasons for Expiry of Rights		In the event of non-payment of the guaranteed amount, the bankruptcy of the borrower or contractor, cancellation of business-related permits, or significant violations of regulations by the borrower.												
	Others														
Busan Metropolitan City	Condominium	Main PF	Joint guarantee	8,400	100%	8,400	Maintenance project association	X	Specialized financial institution	7,000	-	23.10~'26.08	2026. 08.30	PF Loan	-
	Reasons for Expiry of Rights		In the event of non-payment of the guaranteed amount, the bankruptcy of the borrower or contractor, cancellation of business-related permits, or significant violations of regulations by the borrower.												
	Others														

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Busan Metropolitan City	Condominium	Main PF	Joint guarantee	-	100%	-	Maintenance project association	X	Bank	-	2,832	21.04~'24.09	2024.09.30	PF Loan	-	
	Reasons for Expiry of Rights		In the event of non-payment of the guaranteed amount, the bankruptcy of the borrower or contractor, cancellation of business-related permits, or significant violations of regulations by the borrower.													
	Others		Temporary joint guarantee provided to Korea Housing and Urban Guarantee Corporation, resolved upon commencement and completion.													
Busan Metropolitan City	Condominium	Main PF	Joint guarantee	-	100%	-	Maintenance project association	X	Specialized financial institution	-	7,000	21.07~'24.10	2024.10.31	PF Loan	-	
	Reasons for Expiry of Rights		In the event of non-payment of the guaranteed amount, the bankruptcy of the borrower or contractor, cancellation of business-related permits, or significant violations of regulations by the borrower.													
	Others		Resolved through financial restructuring.													
Ansan City	Condominium	Main PF	Joint guarantee	-	100%	-	Maintenance project association	X	Bank	-	3,358	21.08~'24.12	2024.12.31	PF Loan	47,700	
	Reasons for Expiry of Rights		In the event of non-payment of the guaranteed amount, the bankruptcy of the borrower or contractor, cancellation of business-related permits, or significant violations of regulations by the borrower.													
	Others		Temporary joint guarantee provided to Korea Housing and Urban Guarantee Corporation, resolved upon commencement and completion.													
Busan Metropolitan City	Condominium	Main PF	Joint guarantee	7,323	100%	7,323	Maintenance project association	X	Bank	7,323	7,323	22.12~'27.08	2027.08.31	PF Loan	55,000	
	Reasons for Expiry of Rights		In the event of non-payment of the guaranteed amount, the bankruptcy of the borrower or contractor, cancellation of business-related permits, or significant violations of regulations by the borrower.													
	Others		Temporary joint guarantee provided to Korea Housing and Urban Guarantee Corporation, resolved upon commencement.													
Chungju City	Condominium	Main PF	Joint guarantee	8,196	100%	8,196	Maintenance project association	X	Bank	8,196	-	23.05~'27.10	2027.10.25	PF Loan	60,000	
	Reasons for Expiry of Rights		In the event of non-payment of the guaranteed amount, the bankruptcy of the borrower or contractor, cancellation of business-related permits, or significant violations of regulations by the borrower.													
	Others		Temporary joint guarantee provided to Korea Housing and Urban Guarantee Corporation, resolved upon commencement.													
				513,519	100%	213,261					180,304	146,393				507,700
Goyang City	Condominium	Main PF	Joint guarantee	44,200	100%	11,180	Maintenance project association	X	Bank, specialized financial institution	8,600	8,300	22.04~'27.01	2027.01.28	PF Loan	-	
	Reasons for Expiry of Rights		In the event of non-payment of the guaranteed amount, the bankruptcy of the borrower or contractor, cancellation of business-related permits, or significant violations of regulations by the borrower.													
	Others															
Incheon Metropolitan City	Condominium	Main PF	Joint guarantee	135,696	100%	85,160	Maintenance project association	X	Bank	70,966	61,728	22.06~'27.04	2027.04.30	PF Loan	-	
	Reasons for Expiry of Rights		In the event of non-payment of the guaranteed amount, the bankruptcy of the borrower or contractor, cancellation of business-related permits, or significant violations of regulations by the borrower.													
	Others															
Incheon Metropolitan City	Condominium	Main PF	Joint guarantee	52,800	100%	27,372	Maintenance project association	X	SPC for securitization, Specialized financial institution	22,810	21,096	22.06~'27.04	2027.04.30	PF Loan	-	
	Reasons for Expiry of Rights		In the event of non-payment of the guaranteed amount, the bankruptcy of the borrower or contractor, cancellation of business-related permits, or significant violations of regulations by the borrower.													
	Others															
Goyang City	Condominium	Main PF	Joint guarantee	6,470	40%	6,470	Maintenance project association	X	SPC for securitization	6,470	6,470	21.12~'26.06	2026.06.23	PF Loan	-	
	Reasons for Expiry of Rights		In the event of non-payment of the guaranteed amount, the bankruptcy of the borrower or contractor, cancellation of business-related permits, or significant violations of regulations by the borrower.													
	Others		Temporary joint guarantee provided to Korea Housing and Urban Guarantee Corporation, resolved upon commencement.													
Incheon Metropolitan City	Condominium	Main PF	Joint guarantee	2,253	50%	2,253	Maintenance project association	X	Bank, insurance company	2,253	2,253	21.12~'27.06	2027.06.30	PF Loan	380,000	

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	Reasons for Expiry of Rights		In the event of non-payment of the guaranteed amount, the bankruptcy of the borrower or contractor, cancellation of business-related permits, or significant violations of regulations by the borrower.											
	Others		Temporary joint guarantee provided to Korea Housing and Urban Guarantee Corporation, resolved upon commencement.											
Daejeon Metropolitan City	Condominium	Main PF	Joint guarantee	- 100%	Maintenance - project association	X	Bank	-	4,391	22.03~'26.09	2026.09.30	PF Loan	72,000	
	Reasons for Expiry of Rights		In the event of non-payment of the guaranteed amount, the bankruptcy of the borrower or contractor, cancellation of business-related permits, or significant violations of regulations by the borrower.											
	Others		Temporary joint guarantee provided to Korea Housing and Urban Guarantee Corporation, resolved upon commencement and completion.											
			241,418	98%	132,434				111,099	104,238			452,000	

- As of December 31, 2023, the current guarantee details for 13 other project-related PF (loans) are as follows:

(in millions of Korean won)

Business area	Business segment	Types of PF	Type of credit enhancement	Guarantee limit (total)	Burdens rate	Guarantee amount	Debtor		Type of creditor institution	Loan balance		Loan period	(Liquidation) Maturity	Types	Contractual completion liability amount
							Borrower classification	Related Party Status		For the year ended December 31, 2023	For the year ended December 31, 2022				
	Office facility		Debt assumption	140,000	100%	139,012	Implementing agency	X	Bank, insurance company	139,012	-	21.03~'24.04.03	2024.03.22	PF Loan	140,000
Seoul Special City	Reasons for Expiry of Rights	Main PF	In the event of non-payment of the amount to be paid, bankruptcy of the borrower or contractor, cancellation of business-related permits, occurrence of significant legal violations by the borrower, and in the event of a final judgment of defeat in the lawsuit between Korea Railroad Corporation and Meritz Integrated Financial Consortium related to this project.												
	Others		Rescission of obligation to take over debt due to completion of repayment of borrower PF loans												
Daejeon Metropolitan City	Logistics facility	Main PF	Debt assumption	-	100%	-	Implementing agency(SPC)	X	Insurance companies, credit-specialized financial companies	-	-	21.12~'23.12.02	2023.12.23	PF Loan	-
	Reasons for Expiry of Rights		In the event of non-payment of the amount to be paid, bankruptcy of the borrower or contractor, cancellation of business-related permits, occurrence of significant legal violations by the borrower, and in the event of a final judgment of defeat in the lawsuit between Korea Railroad Corporation and Meritz Integrated Financial Consortium related to this project.												
	Others		Rescission of obligation to take over debt due to completion of repayment of borrower PF loans												
Incheon Metropolitan City	Complex facility	Main PF	Joint guarantee	55,200	100%	52,560	Main creditor (SPC) of the implementing agency	X	SPC for securitization	43,800	27,600	21.11~'25.12.02	2024.02.29	ABS TB	1,040,000
	Reasons for Expiry of Rights		In the event of non-payment of the amount to be paid, bankruptcy of the borrower or contractor, cancellation of business-related permits, occurrence of significant legal violations by the borrower, and in the event of a final judgment of defeat in the lawsuit between Korea Railroad Corporation and Meritz Integrated Financial Consortium related to this project.												
	Others		In case of shortfall in interest payment by the borrower, the Company is obligated to provide interest fund replenishment up to KRW 31,843 million as of December 31, 2023 / Although the Company provides guarantees to the liquidity corporation, the loan is ultimately lent to the implementing agency.												

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	Land development	Joint guarantee	6,000	10 0%	6,000	Implementing agency(SPC)	X	SPC for securitization	5,000	5,000	21.08 ~'24.04.08	2024.08.05	AB CP	636,000
Yongin City	Reasons for Expiry of Rights Others	Matin PF	In the event of non-payment of the amount to be paid, bankruptcy of the borrower or contractor, cancellation of business-related permits, occurrence of significant legal violations by the borrower, and in the event of a final judgment of defeat in the lawsuit between Korea Railroad Corporation and Meritz Integrated Financial Consortium related to this project.											
	Logistics facility	Debt assumption	-	10 0%	-	Implementing agency	X	Insurance companies	-	-	20.07 ~'23.03.07	2023.07.27	PF Loan	-
Jeonju City	Reasons for Expiry of Rights Others	Matin PF	In the event of non-payment of the amount to be paid, bankruptcy of the borrower or contractor, cancellation of business-related permits, occurrence of significant legal violations by the borrower, and in the event of a final judgment of defeat in the lawsuit between Korea Railroad Corporation and Meritz Integrated Financial Consortium related to this project.											
	Others	Rescission of obligation to take over debt due to completion of repayment of borrower PF loans												
	Condominium	Joint guarantee	7,800	10 0%	7,800	Shareholders of the implementing agency	X	SPC for securitization	6,500	5,800	22.11 ~'24.04.04	2024.04.26	AB CP	-
Gimpo City	Reasons for Expiry of Rights Others	Matin dg loan	In the event of non-payment of the amount to be paid, bankruptcy of the borrower or contractor, cancellation of business-related permits, occurrence of significant legal violations by the borrower, and in the event of a final judgment of defeat in the lawsuit between Korea Railroad Corporation and Meritz Integrated Financial Consortium related to this project.											
	Others	The Company provides guarantees for loans borrowed by the implementing agency's shareholders, and the said loan is ultimately being utilized for the purpose of this project.												
	Condominium	Joint guarantee	15,240	10 0%	15,240	Implementing agency(SPC)	X	SPC for securitization	12,700	10,000	22.11 ~'24.04.04	2024.04.26	PF Loan	-
Gimpo City	Reasons for Expiry of Rights Others	Matin dg loan	In the event of non-payment of the amount to be paid, bankruptcy of the borrower or contractor, cancellation of business-related permits, occurrence of significant legal violations by the borrower, and in the event of a final judgment of defeat in the lawsuit between Korea Railroad Corporation and Meritz Integrated Financial Consortium related to this project.											
	Complex facility	Fund replenishment	-	10 0%	-	Implementing agency(SPC)	O	Lender group	-	-	22.12 ~'23.03.02	2023.10.31	ABS TB	-
Seoul Special City	Reasons for Expiry of Rights Others	Matin dg loan	In the event of non-payment of the amount to be paid, bankruptcy of the borrower or contractor, cancellation of business-related permits, occurrence of significant legal violations by the borrower, and in the event of a final judgment of defeat in the lawsuit between Korea Railroad Corporation and Meritz Integrated Financial Consortium related to this project.											
	Others	Resolved by financial refinancing												
Seoul Special City	Complex facility	Fund replenishment	360,000	10 0%	220,000	Implementing agency(SPC)	O	SPC for securitization	220,000	-	23.10 ~'24.04.01	2024.10.28	AB CP, PF Loan	-

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3) Real Estate PF Completion Liability Agreement

As of December 31, 2023, the Company provides conditional debt assumption or indemnification agreements in case of non-compliance with contractual completion obligations related to maintenance projects and other projects, with a guarantee limit of KRW 5,592,559 million.

(in millions of Korean won)

	For the year ended December 31, 2023				For the year ended December 31, 2022			
	Number of construction projects	Contract amount	Contracted amount	Outstanding loan balance	Number of construction projects	Contract amount	Contracted amount	Outstanding loan balance
Maintenance projects	9	3,559,376	1,451,359	857,504	13	3,688,814	1,605,173	777,275
(Company's share)		1,794,856	710,291	399,922		1,938,299	796,742	357,066
Other projects	21	4,938,121	3,897,000	2,510,967	27	6,388,925	4,789,400	3,124,591
(Company's share)		4,931,160	3,889,960	2,505,137		6,388,925	4,789,400	3,124,591
	30	8,497,497	5,348,359	3,368,471	40	10,077,739	6,394,573	3,901,866
(Company's share)		6,726,016	4,600,251	2,905,059		8,327,224	5,586,142	3,481,657

4) SOC Business Guarantees

The Company provides funding support up to a total of KRW 404,960 million (2022: KRW 394,960 million) related to borrowings of the Company's SOC subsidiary and the implementing agency. It also bears the obligation to replenish funds in case of insufficient essential business expenses of the SOC subsidiary. Furthermore, the Company provides funds to cover the shortfall in loan principal and interest repayment in case of termination of the agreement with the SOC subsidiary or in case of a buyback request from the supervisory authority, and treats the Company's portion of the loan amount as financial guarantee contract liabilities.

(in millions of Korean won)

	For the year ended December 31, 2023					For the year ended December 31, 2022				
	Number of construction projects	Contracted amount		Outstanding loan balance		Number of construction projects	Contracted amount		Outstanding loan balance	
		Total	Company's share	Total	Company's share		Total	Company's share	Total	Company's share
Funding provision	52	11,585,246	1,727,787	8,795,675	1,148,740	49	11,067,178	1,579,934	8,294,169	1,055,871

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5) Progress Payment Loans

As of December 31, 2023, the Company has entered into agreements to guarantee progress payment loans for maintenance projects, amounting to KRW 80,736 million (KRW 55,728 million in 2022), and the guarantee amount is KRW 24,736 million (KRW 33,311 million in 2022). For other projects, the Company has entered into agreements to guarantee progress payment loans for buyers, amounting to KRW 2,118,839 million (KRW 2,740,689 million in 2022), and the guarantee amount as of December 31, 2023 is KRW 1,215,170 million (KRW 1,334,264 million in 2022).

(in millions of Korean won)

	For the year ended December 31, 2023				For the year ended December 31, 2022			
	Number of projects	Guarantee limit	Contracted amount	Outstanding loan balance	Number of projects	Guarantee limit	Contracted amount	Outstanding loan balance
Maintenance projects	9	80,736	336,399	103,066	6	55,728	232,200	138,796
(Company's share)		31,461	131,086	68,086		41,328	172,200	86,563
Other projects	16	2,118,839	3,796,073	2,265,727	20	2,740,689	4,394,729	2,264,065
(Company's share)		2,063,951	3,567,373	2,037,027		2,685,801	4,166,029	2,113,313
		2,199,575	4,132,472	2,368,793	26	2,796,417	4,626,929	2,402,861
(Company's share)	25	2,095,412	3,698,459	2,105,113		2,727,129	4,338,229	2,199,876

6) Others

Regarding the secondary loan principal totaling KRW 300,000 million in the PF loan of the implementing agency for the Inspire Resort mixed-use development project, the Company has entered into an agreement to provide funding replenishment (limit: equivalent to the shortfall amount) in case of insufficient interest payments, and has accounted for this as financial guarantee liabilities.

7) As of December 31, 2023, the Group has entered into 32 loan agreement with a limit of KRW 716,846 million and KRW 537,698 million with the redevelopment/reconstruction cooperative and developers for the maintenance business and subcontract business including Airport market station construction. In relation to this, the Group recognizes loans of KRW 186,063 million as other financial assets. In addition, the Group has entered into a loan agreement with a developer for the wind power business. In relation to this, the Group recognizes loans of KRW 12,188 million as other financial assets.

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(10) Payment guarantees that are provided for the Company as of December 31, 2023, are as follows:

(in millions of Korean won, thousands of US dollars, Euro, Kuwaiti dinar and Saudi Arabia Riyal)

Guarantor	Contract content	Insurance limit	Amount
Arab Bank Singapore	Payment guarantee in bond for overseas construction	USD	2,248
Banco Santander	Performance Guarantee	USD	323,020
CGIF	274th Green Bond Issuance	CNY	1,000,000
First Abu Dhabi Bank	Performance Guarantee	USD	140,818
Korea Development Bank	Guarantees for FRN	USD	428,457
SC Bank	Contract Performance Guarantee	KRW	55,247
Societe Generale	Performance Guarantee	USD	328,989
Construction Guarantee Cooperative	Contract Performance Guarantee	KRW	7,725,255
Kookmin Bank	Payment guarantee in bond for overseas construction	KWD	1,917
		USD	769
		EUR	4,388
Korea Defense Guarantee Cooperative	Contract, Defect Liability Insurance, etc.	KRW	6,514,365
Seoul Guarantee Insurance Co., Ltd.	Performance Guarantee, etc.	KRW	7,004,400
		EUR	234,640
		USD	322,101
Korea Software Financial Cooperative	Contract, Defect Liability Insurance, etc.	KRW	724,541
Export-Import Bank of Korea	Payment guarantee in bond for overseas construction	USD	1,763,013
		KWD	14,518
		INR	30,000
		EUR	268,020
Shinhan Bank	Guarantees for FRN	EUR	126,000
		USD	179,348
		PHP	97,815
		KRW	78,170
Engineering Financial Cooperative	Performance Guarantee, etc.	USD	3,478
		KRW	606,287
Woori Bank	Foreign Currency Payment Guarantee, etc.	USD	66,311
		EUR	47
		KRW	6,508
Machinery Financial Cooperative	Performance Guarantee	KRW	54,179
Gunhwa Co., Ltd., KG Engineering Co., Ltd.	Construction Project Management Contract Performance Deposit	KRW	153
Moyeong Comprehensive Architecture Office Co., Ltd.	Anseong Techno-Logistics Center Construction Design Consulting Contract Guarantee	KRW	150
KG Engineering Comprehensive Architecture Office Co., Ltd.	Anseong Techno-Logistics Center Construction Design Consulting Contract Guarantee	KRW	64
Korea Housing Urban Guarantee Corporation	Contract Performance Guarantee	KRW	655,134
Hongik Technical Group Co., Ltd.	Seo Ochang Techno Valley Site Development Project Supervision	KRW	456

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	Authority Delegation, etc.		
The Korea Federation of Small and Medium Business	Contract, Defect Liability Insurance, etc.	KRW	4,008
Hana Bank	Foreign Currency Payment Guarantee, etc.	USD	248,172
		KWD	1,504
		SAR	47,667
		JPY	600,000
		KRW	29,500
Industrial Bank of Korea	Import Letter of Credit, etc.	USD	473
Hanmaek Engineering Co., Ltd.	Seo Ochang Techno Valley Site Development Project Supervision Authority Delegation, etc.	KRW	100
Specialized Construction Credit Union	Contract Performance Guarantee	KRW	10,025
Yu-il Co., Ltd.	Environmental Assessment Contract	KRW	23
Kyungdong Engineering Co., Ltd.	Performance Guarantee	KRW	200
EcoTechs Co., Ltd.	Performance Guarantee	KRW	8
Seil Comprehensive Technical Co., Ltd.	Performance Guarantee	KRW	16

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(11) Details of assets provided as collateral for the Group's liabilities as of December 31, 2023, are as follows:

(in millions of Korean won, thousands of US dollars, Euro, Kuwaiti dinar and Saudi Arabia Riyal)

		Mortgage amount	Mortgagee	Classification
Inventories	KRW	126,886	The Korea Development Bank and others	
	USD	21,313	The Korea Development Bank and others	
	MYR	351,234	Minister of Finance, Malaysia	
	JPY	2,654,004	Mizuho Bank	
Property, plant and equipment	KRW	2,429,870	The Korea Development Bank and others	
	USD	168,049	Woori Bank and others	
	CNY	41,977	Bank of China and others	
	MYR	1,156,102	Minister of Finance, Malaysia	
	GBP	84,480	The Korea Development Bank	Collateral for borrowings and others
Investment property	KRW	336,461	Lotte Shopping Co., Ltd. and others	
Intangible assets	CNY	354,629	Bank of China and others	
Financial assets	KRW	7,476,464	The Korea Development Bank and others	
	USD	578,255	The Korea Development Bank and others	
	JPY	2,838,748	Fuyo General Lease and others	
	CNY	498,024	Agricultural Bank of China and others	
	EUR	9,366	Hana Bank and others	
Other assets	KRW	151,969	Hana Bank and others	

Shares of Hanwha Life Insurance Co., Ltd. and the Group's subsidiaries are provided as collateral for trading purposes, such as borrowings, as of December 31, 2023. The maximum amount of guarantee provided by collateral amounts to ₩ 345,019 million.

(12) Financial assets at fair value through profit or loss amounting to ₩ 3,802,485 million and ETF to ₩ 518,711 million are provided as collateral in relation to bonds sold under repurchase agreement as of December 31, 2023. This transaction is a financial instrument that has not met the derecognition conditions due to an agreement to repurchase the securities at a certain price at the contract termination date upon sale, and the bonds sold under repurchase agreement as of December 31, 2023, amount to ₩ 3,843,411 million.

(13) Certificate of beneficial interest in investor's deposit (trust) at Kookmin Bank in relation to replacement services of net settlement is provided as collateral for amounts of ₩ 47,000 million as of December 31, 2023.

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(14) Related to trading finance and collateral loans, ₩ 1,625,801 million of securities that are received or pledged as collaterals are provided to KSFC as of December 31, 2023.

(15) As of December 31, 2023, deposits totaling ₩ 27,079 million are pledged as collateral to Joint stock Commercial Bank for Investment and Development of Viet Nam and 4 other institutions in connection with fund loans.

(16) As of December 31, 2023, the Group has 2,010 pending cases excluding above. The Group is the plaintiff in 983 cases with a total litigation amount of ₩ 533,086 million, USD 6 million, EUR 13 million, CNY 273 million and QAR 0 million and the defendant in 1,027 cases with a total litigation amount of ₩ 470,621 million, USD 1 million, EUR 50 million, CNY 257 million and QAR 5 million. Management believes that the outcome of these cases will not materially affect the Group's consolidated financial statements.

(17) Grant of stock options to financial investors

As of December 31, 2023, the Group granted stock options (put back options) to the financial investors of the following developers.

Ulsan Green Co., Ltd.	
Exercise period	From the start to the end of business operation
Share to be purchased	Entire equity capital invested by the financial investors
Exercise price	Face value (₩ 3,507 million)
Condition for exercise	1) From the start date of business operation ~ 5 years: under 90% of the expected revenue
	2) 5 ~ 10 years: under 85% of the expected revenue
	3) After 10 years: under 80% of the expected revenue

Jeju Ecotech Co., Ltd.	
Exercise period	From the start to the end of business operation
Share to be purchased	Entire equity capital invested by the financial investors
Exercise price	Face value (₩ 898 million)
Condition for exercise	1) Cancel the designated participant or revoke the agreement
	2) Whole or the part of PF agreement is ineffective due to the fault of the business and construction investors
	3) Declare the loss of profit within period based on the agreement

(18) In order to develop new products, the Group has entered into a technology introduction contract with General Electric Company of USA and others.

(19) The Group entered into Risk and revenue Sharing program (RSP) with Pratt & Whitney in the USA and others to promote engine parts business and expand the mid- to long-term business model. Through RSP, the Group is allocated with benefits and risks from business including development, mass production, and aftermarket sales of airplane engines in proportion to its participation. Pratt & Whitney and others, who are Consortium leaders (OEM, Original Equipment Manufacturer) of the agreement, have been providing products and services to aircraft manufacturers such as Airbus and others and transportation service company such as Korean Air and others. The Group bears rights and obligations up to the proportion of its participation (1~3% for each program classified by types of engines supplied by the Group) according to the agreement.

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Revenues in relation to the agreement mostly occur through supply of designated products, and some of the revenues occur by providing engine repair and other services. Also, costs of the agreement include manufacturing cost to supply products, business participation cost agreed to pay for participation in business, development cost to enhance capability of engines, program management cost, sales promotion cost paid to customers, and others.

In addition, the Group has been distributed with arrangements such as borrowing limits provided by the program in accordance with the agreement up to its percentage of shares. According to the agreement, the Group has provided ₩ 135,903 million of borrowing limits to Indigo Airline, Delta Airline, and others.

(20) As of December 31, 2023, the Group entered into an agreement for mutual growth of large and small business with Woori Bank, Korea Development Bank and others. In accordance with the agreement, the Woori Bank, Korea Development Bank and others support small business that cooperates with the Group, where Woori Bank, Korea Development Bank and others additionally set up a special fund based on the deposit of ₩ 66.5 billion from the Group.

(21) Details of securities borrowed as of December 31, 2023 and 2022, are as follows:

<i>(in millions of Korean won)</i>	Counter-party	2022	2021
Listed shares	Korea Securities Depository	₩ 787,293	₩ 1,312,836
Government bond/municipal bond	The Korea Securities Finance Corporation	336,500	770,000
	Total	₩ 1,123,793	₩ 2,082,836

(22) Securities in custody received from customers as of December 31, 2023 and 2022, are as follows:

<i>(in millions of Korean won)</i>	2023	2022
Trustor securities in custody	₩ 24,536,864	₩ 18,694,245
Beneficial securities in custody	30,827,018	29,964,321
Other securities in custody	116,800	61,600
	₩ 55,480,682	₩ 48,720,166

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(23) Accounts receivable from the companies, which are under the court receivership, as of December 31, 2023, are as follows:

<i>(in millions of Korean won)</i>		Amount
Companies under legal management and commencement of composition	₩	686
Loss allowance ¹		686

¹ According to the plan for collection of the receivables, the Group recognized ₩ 686 million as provision for impairment after discounting at present value. However, recoverable amount of above receivables can be changed since corresponding companies are currently under the court receivership. The consolidated financial statements for the year ended December 31, 2023 do not include these adjustments due to uncertainty.

(24) Credit derivatives

As of December 31, 2023, the Group has entered into 47 credit derivative contracts, including CDS contracts, with the outstanding amount of ₩ 701.4 billion of asset position (14 credit derivative contracts) and ₩ 1,323.2 billion of liability position (33 credit derivative contracts). The contracts consist of derivatives contracts for related credit risks of domestic and foreign governments and corporations. In accordance with the contracts, in the event of a specific credit event, the Group is obligated to repay debts equivalent to the face value of guaranteed short position minus the recovery rate amount.

(25) Commitment of allowance for loss in relation to distribution of cooperative assets

Investment fund has a contractual arrangement on liability for loss in relation to the distribution of fund assets. The Group, as a general partner of the fund, receives a distributive share of paid-in capital after offsetting loss first. Such arrangement has an impact on the evaluation of the fund's paid-in capital. Detailed arrangement on liability for the loss that will be determined upon liquidation is as follows:

Detail of arrangement

KoFC Value-up Private Equity Fund ²	When the amounts less operating expenses are less than the total paid-in capital, a general partner shall offset the deficit first within a range of ₩2.5 billion.
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¹ KoFC Value-up Private Investment Equity Fund was sold to Hanwha Asset Management Co., Ltd., the Group's subsidiary, during the year ended December 31, 2015. However, at the request of the buyer, the Group's deposits to Woori Bank was pledged as collateral in relation to the liability for loss.

As of December 31, 2023, the maximum loss allowance for the contract in its entirety is ₩ 5,000 million, and the Group recognizes provisions for the allowance amounting to ₩ 2,500 million

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considering the possibility to assume losses.

(26) Among the available-for-sale securities invested by the Group for the year ended December 31, 2023, the fund operated by GEN2 PARTNERS amounts to ₩ 63 billion and its repurchase has been temporarily suspended due to the recent outbreak of COVID 19. However, since the Group issued derivatives-combined securities using the fund as an underlying asset and the fair value of the securities is linked to the underlying asset, the impact of the changes in fair value up to the end of the current period on the consolidated financial statements is not material.

(27) As of December 31, 2023, the Group has obligation for offset trading in relation to export of K9 self-propelled howitzer to Norway, and will perform the obligation until 2030. Due to the nature of the offset trading agreement, specific performance obligations have not been prescribed and as a result, the Group does not recognize provisions since expenses are not reliably measured.

(28) As of December 31, 2023, the Group has entered into reinsurance agreements for CI insurance, cancer insurance, and health insurance for the sick with Reinsurance Group of America, Korean Reinsurance Co., Ltd., Munich Reinsurance Company and 7 other global reinsurers.

Details of outwards and inwards agreements the Group has entered into for general, long-term and automobile insurance of Hanwha General Insurance Co., Ltd., a subsidiary, as of December 31, 2023, are as follows:

	Reinsurance company	Ratio	Insurance product
Proportional	Korean Reinsurance Company	10~30% of VaR	Automobile insurance (excluding joint risk)
	Korean Reinsurance Company and others	15~70% of VaR	Fire insurance
	Korean Reinsurance Company and others	15~70% of VaR	Marine insurance
	Korean Reinsurance Company and others	20~90% of VaR	Special insurance
	Korean Reinsurance Company	25~65% of VaR	Long-term insurance (property, accident, disease and others)
	SCOR RE and others	5~60% of VaR	Long-term insurance (accident, disease and others)
Excessive	Korean Reinsurance Company and others	₩ 0.875 billion ~ Infinite,	Automobile insurance (personal indemnification)
	Korean Reinsurance Company	₩ 1.26 billion ~ ₩ 5.75 billion	Automobile insurance (Automobile - collateralization)
	Korean Reinsurance Company	₩ 0.6 billion ~ ₩ 98 billion	Long-term insurance (property and accident)
	SWISS RE and others	0~100% of excess amount	Other general

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(29) During the year ended December 31, 2023, the Group entered into a sales contract with DS Networks Co., Ltd. to purchase 138 rooms on the lower floors and ancillary facilities, which are part of a total of 690 living accommodation facilities in a 48-story accommodation complex located in Anyang-si, Gyeonggi-do. After the completion of the construction, the Group will enter into the sales contract. The expected payment for the lump-sum purchase is ₩ 34 billion.

(30) The Group has entered into a put option agreement with the existing largest shareholders of Satrec Initiative Co., Ltd. through shareholders' agreement related to the acquisition of new shares of Satrec Initiative Co., Ltd. According to the agreement, the existing largest shareholders of Satrec Initiative Co., Ltd. have a put option in which they can claim for the Group to acquire a certain number of shares every year from 2027 to 2031.

(31) In June 2022, the Group additionally acquired convertible bonds issued by OverAir Inc. from the United States to strengthen its UAM (Urban Air Mobility) business. The additional acquisition amount is USD 115,000,000, and it holds the right to convert into stocks and warrants upon meeting certain conditions in the future, such as attracting additional investments. Furthermore, including the convertible bonds acquired in 2021, the Group holds two seats on OverAir Inc.'s board of directors and has authority related to the appointment of outside directors.

(32) The amount committed but not yet occurred for the acquisition of property, plant and equipment, intangible assets and investment property as of December 31, 2023 amount to ₩ 762,659 million.

57. Cash Flow Information

(1) Details of cash provided by operations for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>	2023		2022	
Profit for the year	₩	2,246,616	₩	2,133,918
Addition of expenses not involving cash outflows:				
Finance income (non-financial business)		(238,876)		(116,794)
Finance cost (non-financial business)		902,887		547,445
Finance income (financial business)		(4,093,768)		(3,749,894)
Finance cost (financial business)		500,868		300,004
Impairment loss (reversal)		186,135		43,684
Depreciation of property, plant and equipment		1,088,831		972,802
Amortization		234,614		202,267
Depreciation of right of use assets		230,188		182,035
Post-employment benefit		321,890		295,383
Provision		413,838		183,671
Loss on foreign currency translation		279,972		751,358
Gain on foreign currency translation		(733,257)		(1,304,395)

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Share of profit (loss) of associates and joint ventures	(49,476)	76,020
Gain (loss) on valuation of financial instruments	(1,554,957)	1,038,259
Gain (loss) on disposal of financial instruments	(478,336)	2,113,324
Gain (loss) on insurance contract	3,512,283	(135,230)
Others	292,023	(533,509)
Changes in working capital:		
Trade receivables	(304,041)	(1,843,934)
Other receivables	(155,563)	(112,733)
Inventories	(1,053,862)	(669,864)
Loan receivables and other receivables	734,323	(1,117,771)
Financial assets at fair value through profit or loss	205,159	591,695
Financial assets at fair value through other comprehensive income	1,740	(115,296)
Other financial assets	1,893,682	289,453
Other assets	(992,899)	(1,421,248)
Trade payables	64,446	(474,092)
Other payables	(262,556)	(264,589)
Defined benefit liabilities	(372,622)	(285,261)
Provisions	(259,644)	(157,382)
Other financial liabilities	(1,586,526)	(642,019)
Other liabilities	1,685,843	3,359,607
Other withheld liabilities	239,190	(274,618)
Insurance contract liabilities/assets)	(2,219,004)	(864,701)
Others	1,831	10,320
Cash provided by (used in) operations	₩ 680,972	(992,085)

(2) The significant non-cash transactions for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>		2023		2022
Increase(decrease) in financial assets at fair value through other comprehensive income	₩	3,010,701	₩	(7,299,551)
Revaluation of property, plant and equipment in the principal account		1,002,206		788,361
Acquisition of right-of-use assets (new contract for lease liabilities)		593,688		529,091
Changes in revaluation surplus		3,016,755		125,928
Fair value assessment of investment properties		131,206		251,019
Disposal of right-of-use assets (termination of lease liabilities)		(242,353)		(193,151)
Exchange of treasury shares and shares of other companies		-		156,840

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(3) Changes in liabilities arising from financing activities for each of the two years in the period ended December 31, 2023 are as follows:

(in millions of Korean won)

	2023					
	Beginning		Changes resulting from financing activities		Others ¹	Ending
Bank borrowings and debentures ²	₩	23,150,898	₩	4,166,204	₩ (853,739)	₩ 26,463,363
Other financial liabilities		805,529		(61,220)	101,519	845,828
Lease liabilities		1,078,666		(243,141)	487,257	1,322,782
Liabilities resulting from financing activities	₩	25,035,093	₩	3,861,843	₩ (264,963)	₩ 28,631,973

¹ Others include interest expense and gain and loss on foreign currency translation.

² Bank borrowings exclude bond sold under repurchase agreements classified as cash flows generated from operation.

(in millions of Korean won)

	2022					
	Beginning		Changes resulting from financing activities		Others ¹	Ending
Bank borrowings and debentures ²	₩	18,622,704	₩	2,867,260	₩ 1,660,934	₩ 23,150,898
Other financial liabilities		878,693		(10,878)	(62,286)	805,529
Lease liabilities		957,183		(221,890)	343,373	1,078,666
Liabilities resulting from financing activities	₩	20,458,580	₩	2,634,492	₩ 1,942,021	₩ 25,035,093

¹ Others include interest expense and gain and loss on foreign currency translation.

² Bank borrowings exclude bond sold under repurchase agreements classified as cash flows generated from operation.

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58. Assets Held for Sale

Assets held for sale as of December 31, 2023 and 2022 are as follows:

<i>(in millions of Korean won)</i>	Predicted date of sale	2023	2022
Assets held for sale			
Land	-	₩ -	₩ 86,242
Buildings	-	-	37,086
Others ^{1,2}	In 2024	6,395	819
Subtotal		₩ 6,395	- 124,147

¹ Assets held for sale of KRW 4,928 million as of December 31, 2023 will be sold to Tech in Asia Pte. Ltd. in January 2024 and assets held for sale of KRW 1,467 million will be sold to Clermont Co., Ltd. in December 2024.

² Assets held for sale of KRW 4,928 million are included in miscellaneous assets of financial business.

59. Risk Management

(1) Financial risk management of non-financial business

The Group's activities expose it to a variety of financial risks: market risk (including currency risk and interest rate risk), credit risk and liquidity risk. The Group's overall risk management program seeks to minimize potential adverse effects on the Group's financial performance.

The objects of financial risk management are financial assets, including cash and cash equivalents, financial assets at fair value through profit or loss, financial assets at fair value through other comprehensive income, financial assets at amortized cost, and trade receivables and other receivables, and financial liabilities, including trade and other payables, borrowings, and debentures.

1) Market risk

① Foreign exchange risk

Foreign exchange risk of the Group arises when future commercial transactions or recognized assets or liabilities are denominated in a currency that is not the Group's functional currency. The Group is exposed to foreign exchange risk arising from various currency exposures, primarily with respect to USD, EUR, JPY and CNY. The Group operates hedging policies for each company within the Group, considering the nature of business and the existence of instruments to cope with the risks of exchange rate fluctuation. Additionally, the Group periodically evaluates and handles such risks exposed through managing system for receivables and payables denominated in foreign currencies, and reports the results to the management.

The impacts of weakened/strengthened Korean won by 10% against foreign currencies, with all

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other variables held constant, on the profit before income tax for the year ended December 31, 2023, are as follows:

<i>(in millions of Korean won)</i>		10% increase	10% decrease
USD	₩	126,481	₩ (126,481)
EUR		(5,819)	5,819
JPY		2,852	(2,852)
CNY		(2,389)	2,389

The above sensitivity analysis is performed based on monetary assets and liabilities denominated in a currency that is not the Group's functional currency.

② Interest rate risk

The Group's interest rate risk arises mainly from borrowings. Borrowings issued at variable rates expose the Group to cash flow interest rate risk, which is partially offset by currency swap. Also, fixed-rate borrowings expose the Group to fair value interest rate risk. The Group analyzes and manages its interest rate exposure through various manners, such as to share excess cash within the Group to minimize external borrowings, to avoid high rate borrowings, to reform capital structure, to manage an appropriate ratio of fixed-rate borrowings and variable rate borrowings and to monitor a fluctuation of domestic and foreign interest rates.

The impact of 1% higher/lower of interest rate (on floating rate borrowings) with all other variables held constant on the Group's profit before income tax for the year ended December 31, 2023, would have been ₩ 90,870 million lower/higher.

2) Credit risk

Credit risk is managed on a group basis. Credit risk arises from cash and cash equivalents, derivative financial instruments and deposits with banks and financial institutions, as well as credit exposures to wholesale and retail customers, including outstanding receivables and committed transactions. In order to manage credit risk, the Group opens and maintains its business only with customers whose credit qualities exceed a required minimum rating and periodically reevaluates credit qualities of customers to amend a credit limit, if necessary. As of December 31, 2023, management does not expect any material losses from default by counterparties. As of December 31, 2023, the Group is exposed to credit risk related to financial guarantees provided by the Group to related parties and others (Notes 55 and 56).

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3) Liquidity risk

The Group monitors rolling forecasts of its liquidity requirements to ensure it has sufficient cash to meet operational needs while maintaining sufficient headroom on its undrawn committed borrowing facilities at all times. The Group's treasury department invests surplus cash in time deposits and interest-bearing money market deposits, choosing instruments with appropriate maturities or sufficient liquidity to provide sufficient headroom.

Details of the Group's liquidity risk analysis as of December 31, 2023 and 2022 are as follows. The amounts disclosed in the table are the contractual undiscounted cash flows.

(in millions of Korean won)

	2023			
	Less than 1 year	Between 1 and 5 years	More than 5 years	Total
Bank borrowings ¹	₩ 8,207,353	₩ 5,939,253	₩ 388,588	₩ 14,535,194
Debentures ¹	2,115,748	4,387,620	-	6,503,368
Trade and other payables	4,977,393	250,963	118,081	5,346,437
Derivative financial liabilities ²	12,210	152,759	2,076	167,045
Other financial liabilities ³	1,753,270	900,254	1,144,388	3,797,912
Total	₩ 17,065,974	₩ 11,630,849	₩ 1,653,133	₩ 30,349,956

¹ Expected cash flows of related interest expenses are included.

² Cash flows of derivative financial instruments include time value and others.

³ Expected cash flows of accrued interest expenses are excluded.

(in millions of Korean won)

	2022			
	Less than 1 year	Between 1 and 5 years	More than 5 years	Total
Bank borrowings ¹	₩ 6,829,604	₩ 3,813,056	₩ 741,932	₩ 11,384,592
Debentures ¹	1,887,505	3,990,514	-	5,878,019
Trade and other payables	4,149,014	298,158	127,394	4,574,566
Derivative financial liabilities ²	29,865	159,748	-	189,613
Other financial liabilities ³	1,193,828	774,666	1,038,996	3,007,490
Total	₩ 14,089,816	₩ 9,036,142	₩ 1,908,322	₩ 25,034,280

¹ Expected cash flows of related interest expenses are included.

² Cash flows of derivative financial instruments include time value and others.

³ Expected cash flows of accrued interest expenses are excluded.

The Group has entered into both financial guarantee contracts and performance guarantee contracts, which are not considered in the above table. Therefore, if the guarantor fails to fulfill its obligations, payment obligations may arise within a year, and the maximum exposure for borrowing

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agreements, loans and investments, and PF guarantee agreements is described in Note 56.

(2) Fair value measurement of non-financial businesses

The Group classifies financial instruments measured at fair value into the following fair value hierarchy based on the inputs used in the fair value measurement process.

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

1) Fair value hierarchy classifications of the financial assets and the financial liabilities that are measured at fair value or their fair value is disclosed as of December 31, 2023 and 2022 are as follows:

(in millions of Korean won)

	2023			
	Level 1	Level 2	Level 3	Total
Recurring fair value measurements				
Assets				
Financial assets at fair value through profit or loss				
Cash and cash equivalents	₩ -	₩ 337,050	₩ -	₩ 337,050
Trade and other receivables	-	-	-	-
Other financial assets	-	69,173	-	69,173
Equity securities	69,145	-	100,341	169,486
Beneficiary certificates	-	-	215,131	215,131
Debt securities	-	-	589,917	589,917
Financial assets at fair value through other comprehensive income				
Equity securities	275,189	-	57,105	332,294
Debt securities	-	-	646	646
Derivative financial assets	-	84,131	37,752	121,883
Total	₩ 344,334	₩ 490,354	₩ 1,000,892	₩ 1,835,580
Liabilities				
Derivative financial liabilities	₩ -	₩ 104,809	₩ 62,236	₩ 167,045
Total	₩ -	₩ 104,809	₩ 62,236	₩ 167,045

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	2022			
	Level 1	Level 2	Level 3	Total
Recurring fair value measurements				
Assets				
Financial assets at fair value through profit or loss				
Cash and cash equivalents	₩ -	₩ 630,395	₩ -	₩ 630,395
Trade and other receivables	-	2,198	-	2,198
Other financial assets	-	91,569	-	91,569
Equity securities	9,700	3,099	88,566	101,365
Beneficiary certificates	-	-	98,902	98,902
Debt securities	-	-	506,120	506,120
Financial assets at fair value through other comprehensive income				
Equity securities	134,474	17,396	320,974	472,844
Debt securities	-	-	-	-
Derivative financial assets	-	129,709	87,303	217,012
Total	₩ 144,174	₩ 874,366	₩ 1,101,865	₩ 2,120,405
Liabilities				
Derivative financial liabilities	₩ -	₩ 40,047	₩ 149,566	₩ 189,613
Total	₩ -	₩ 40,047	₩ 149,566	₩ 189,613

2) Changes in Level 3 of the fair value hierarchy for the recurring fair value measurements for each of the two years in the period ended December 31, 2023 are as follows:

(in millions of Korean won)

	2023	2022
Beginning	₩ 952,299	₩ 471,325
Purchase	195,076	690,697
Sales	(55,262)	(13,647)
Gain (loss) recognized in profit or loss	111,017	(49,775)
Loss recognized in other comprehensive income	(15,814)	(129,013)
Others	(249,023)	(17,288)
Ending	₩ 938,293	₩ 952,299

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3) Valuation techniques and inputs

The Group uses the following valuation techniques and inputs for recurring fair value measurements classified into Level 2 and Level 3, as well as for non-recurring fair value measurements and fair values disclosed.

- Derivatives (currency forward, currency swap, interest rate swap)

The fair value of the foreign currency forward contracts is measured principally on the basis of the forward exchange rates disclosed in the market at the end of the reporting period for the periods in which they are consistent with the remaining period of the currency forward. If the forward exchange rate of the period consistent with the remaining period of the currency forward is not disclosed in the market, the Group measures its value according to estimating forward exchange rate by applying interpolation method with each period of forward rate disclosed in the market, and in this case, period similar to the remaining period of forward exchange contracts is used. For currency forward, currency swap and interest rate swap for which forward exchange rate is not disclosed, the present value is measured based on evaluation reports received by financial institutions. The fair value measurement for the derivatives is categorized within Level 2 as inputs used for valuation are derived from observable market forward rate and others at the reporting period.

Details of derivative financial assets categorized as Level 3 are as follows:

Details

Underlying assets	Residual equity of P&W NGPF Manufacturing Company Singapore. Ltd (70%)
Exercise price of call option	70% of P&W NGPF Manufacturing Company Singapore. Ltd.'s net asset value plus \$11,800,000 at the time of the exercise
Exercise period of call option	November 30, 2024
Owner of call option	Hanwha Aerospace Co., Ltd.
Discount rate	Singapore Government bond interest rate curve

The Group recognizes derivative financial liabilities according to Shareholders' agreement and others, other than the above derivative financial instruments (Note 58).

- Government and public bonds

The fair value of government and public bonds is calculated by discounting the future cash flow at the market interest rate that is applied to other companies that have similar credit ratings as the issuer of debt security. Therefore, the Group categorized the fair value measurement of government and public bonds as Level 2 in fair value hierarchy.

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- Unlisted securities

The fair value of unlisted shares is measured using discounted cash flow model. To estimate future cash flows, certain assumptions which are not based on observable market price or ratio, such as revenue growth rate, pre-tax operating profit rate and discount rate, are used. WACC used to discount future cash flows are calculated by applying Capital Asset Pricing Model (CAPM) from similar listed corporations. The Group determined that key assumptions and estimation described above have significant impact on the fair value of unlisted shares and categorized the fair value measurement of unlisted shares as Level 3 in fair value hierarchy.

(3) Financial risk management of financial business

1) Risk management policy

① Concepts

Insurance companies play a significant role in the financial market by providing risk protection services. The Group strives for stable growth and value creation for shareholders and policyholders through continuous management of insurance, interest rate, credit, market, liquidity, and operational risks, in accordance with risk management principles in an increasingly complex financial environment.

② Objectives of the risk management

The Group pursues the maximization of its value and the sustainable and stable growth by proactively preventing and effectively assessing and managing various uncertainties or potential losses arising from the fluctuating financial environment and business activities."

③ Risk management strategy

In the short term, the Group establishes and manages maximum permissible limit to maintain entire risk level below or within a certain level of available capital (capital used as a buffer by the Group in the event of risk realization). In addition, the Group operates the risk management process for investment activity and insurance product development.

In the middle and long term, the Group seeks to maximize its value and profit-oriented business strategy, which reflects asset and liability management ("ALM") investment strategies reflecting the characteristics of insurance products into its business and asset management plan. Also, risk management organization and management's reporting system maintain independence and principle of checks and balances.

④ Structure and function of the risk management organization

The Group manages various risks through the Risk Management Committee, Risk Management Forums (Insurance Division/Asset Division/Common Division), and the Risk Management Team.

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Additionally, it operates various councils including the Asset Management Council, Disclosure Rate Council, Product Development Council, Gain/Loss Management Council, Reinsurance Management Council, Variable Insurance Financial Risk Management Council, and Financial Conglomerate Group Risk Management Council in relation to operational tasks to manage company risks from multiple angles.

(i) Risk management committee

The risk management committee is composed of more than three directors who are elected at the board of directors. The risk management committee establishes standards and measures of the risk management and approves the permissible risk limit and others.

(ii) Risk management action officers committee

Risk management action officers committee is composed of members who are managers of each risk management department. The committee performs checking running state of the committee's decision, deliberation on detailed regulations for risk management, matters delegated by Risk management committee and others.

Categories and function of subcommittees:

Name of sub-committee	Major function
Asset management committee	Deliberation of quarterly asset management strategy and target portfolio, transaction of investment and loan, choice of asset management companies and others
Quoted interest rate committee	Deliberation of quoted interest rate
Product development committee	Deliberation of development and sale of insurance product and development of other product
Gain/Loss Management Council	Establishes a divisional consultation and coordination system related to gain/loss management to enhance the Group's gain/loss management
Reinsurance management committee	Management of reinsurance ceded and assumed, selection of reinsurer, analysis for reinsurance transaction and others
Variable insurance guarantee risk management committee	Deliberation of management instruction, hedging strategy of guarantee risk of variable insurance and others and report on results of hedging
Financial Conglomerate Group Risk Management Council	Reviews or examines matters related to the board of directors and risk management committee of the representative company of the financial conglomerate group, adequacy assessment and management of capital, establishment of risk management standards, integrated crisis response analysis, and emergency planning.

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⑤ Internal capital adequacy assessment and management procedures

The Group measures and internally manages, as well as externally discloses, the solvency ratio by measuring the solvency margin ratio according to the regulations of the insurance supervision, based on the solvency amount and the solvency standard amount, in order to manage the necessary capital to maintain solvency.

The solvency ratio is calculated by dividing the solvency amount, which is the size of the capital actually held by the insurance company to protect against loss risks faced in management, by the solvency standard amount, which is the Group's risk amount, and serves as a measure of the financial soundness of the insurance company or its ability to pay insurance claims.

Supervisory authorities mandate maintaining the solvency ratio at or above 100%, and in case the solvency ratio falls below 100%, timely corrective measures are taken according to the solvency ratio to prevent further deterioration.

Korean Insurance Capital Standard (K-ICS) ratio

Recommend business improvement
50% - 100%

Demand business improvement 0% -
50%

Recommend business improvement
Below 0%

Complementary Measures

Recommend increase / decrease of equity capital,
restrict any new business, and others

Demand change of management members, suspend of
partial operations, and others

Cancellation of share, operation transfer, merger,
contract transfer and others

The Group divides risk into insurance, interest rate, credit, market and operation risk for the calculation of risk-based capital. The Group takes RBC influence into consideration for portfolio strategy. The Group measures the level of internal risk using internal risk model for insurance, interest rate, credit and market risk.

2) Management of insurance risk

① Overview

The Group manages insurance risk based on the insurance risk amount determined by the solvency standard amount. According to the solvency standard amount, insurance risk is segmented into sub-risks for mortality risk, longevity risk, disability/illness risk, long-term property/other risk, lapse risk, expense risk, and catastrophe risk. Actuarial assumptions related to each risk, which have material impacts on the future cash flows of insurance contracts, are important factors. Therefore, the Group manages insurance risk based on actuarial assumptions and financial market indicators such as interest rates, which have material impacts on the amount, timing, and uncertainty of future cash flows of insurance contracts.

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	Assumptions and Financial market indicators	Others
<i>Actuarial assumptions</i>	<i>Risk rate assumptions</i> <i>Lapse rate assumptions</i> <i>Expense ratio assumptions</i> <i>Other assumptions</i>	<i>Mortality risk, longevity risk, disability/illness risk</i> <i>Lapse risk</i> <i>Expense risk</i> <i>Policyholder behavior assumptions, etc.</i>
<i>Financial market indicators</i>	<i>Interest rates</i> <i>Stock prices</i> <i>Exchange rates</i>	<i>Discount rates for calculating future cash flows and present values of insurance contracts linked to interest rates</i> <i>Future cash flows of insurance contracts linked to stock prices</i> <i>Future cash flows of insurance contracts linked to exchange rates</i>

② Measurement Method

Insurance risk is measured using both standard models and internal models simultaneously. The standard model refers to the calculation of insurance risk amount (Article 7-2, Paragraph 2 of the Insurance Business Supervision Regulations) based on the risk-based capital regime of the Financial Supervisory Service. The insurance risk amount calculated by the internal model operated by the Group is determined using a shock scenario approach, based on a 99.5% confidence level Value at Risk (VaR) shock rate calculated per actuarial assumption.

③ Management Method

- a. The Group sets limits for insurance risk exposure based on its internal model and monitors the results on a quarterly basis, reporting them to the Risk Management Committee for oversight.
- b. The Group monitors the gain/loss ratios for each coverage (general death, accident death, accident/injury, illness/injury hospitalization, surgery, diagnosis, outpatient, and miscellaneous) quarterly and analyzes the changes in each quarter, compiling them into an analysis report for presentation to the Risk Management Committee for oversight.
- c. Annually, the Group establishes crisis severity levels (caution, warning, occurrence) based on the suitability review of crisis situations, checks the claims payment ratio for the preceding year monthly, and reports the results to the Risk Management Committee on a quarterly basis for oversight.
- d. With the aim of enhancing the insurance payment capability for policyholders, the Group reinsures considering the degree of risk exposure and efficient risk diversification.

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④ Sensitivity Analysis of Insurance Risks

The financial impact of insurance risks related to actuarial assumptions and financial market indicators managed by the Group is as follows:

a. Financial Impact of Actuarial Assumptions Changes

The financial impact of changes in actuarial assumptions on insurance contracts of the Group and its major subsidiaries as of December 31, 2023 and 2022 is as follows:

- Life Insurance

(in millions of Korean won)	Assumptions	Changes in Assumptions	Insurance Contract Margin and Reinsurance Contract Margin		Changes in Net Profit (*)		Changes in Equity	
			Reinsurance contract margin Increase (Decrease)	Reinsurance contract margin Increase (Decrease)	Before reflecting the impact of reinsurance contracts	After reflecting the impact of reinsurance contracts	Before reflecting the impact of reinsurance contracts	After reflecting the impact of reinsurance contracts
2023	Risk ratio	10% Increase	₩ (2,394,467)	₩ (198,946)	₩ (33,596)	₩ (37,038)	₩ (33,596)	₩ (37,038)
		10% Decrease	2,447,385	191,937	33,985	37,282	33,985	37,282
	Expense ratio	10% Increase	(946,926)	-	(15,538)	(15,538)	(15,538)	(15,538)
		10% Decrease	800,182	-	13,216	13,216	13,216	13,216
	Lapse ratio	10% Increase	(860,059)	570	(13,092)	(13,151)	(13,092)	(13,151)
		10% Decrease	947,137	(729)	14,668	14,729	14,668	14,729
2022	Risk ratio	10% Increase	(2,175,606)	(195,136)	(32,661)	(35,806)	(32,661)	(35,806)
		10% Decrease	2,201,094	187,825	32,671	35,735	32,671	35,735
	Expense ratio	10% Increase	(900,313)	-	(15,408)	(15,408)	(15,408)	(15,408)
		10% Decrease	763,170	-	13,082	13,082	13,082	13,082
	Lapse ratio	10% Increase	(756,341)	(2,392)	(10,236)	(10,265)	(10,236)	(10,265)
		10% Decrease	823,972	2,305	11,228	11,252	11,228	11,252

(*) This refers to the change in revenue from contractual service margin adjustment estimated based on contractual service margin changes and adjustment ratio for the group of insurance contracts that will arise from additional assumption changes (10% increase/ decrease) relative to actuarial assumption changes in the 4th quarter of 2023.

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- Non-life Insurance

(in millions of Korean won)	Assumptions	Changes in Assumptions	Insurance Contract Margin and Reinsurance Contract Margin		Changes in Net Profit (*)		Changes in Equity	
			Insurance contract margin Increase (Decrease)	Reinsurance contract margin Increase (Decrease)	Before reflecting the impact of reinsurance contracts	After reflecting the impact of reinsurance contracts	Before reflecting the impact of reinsurance contracts	After reflecting the impact of reinsurance contracts
2023	Loss ratio	10% Increase	₩ (1,881,078)	₩ (35,554)	₩ (126,510)	₩ (122,884)	₩ (126,510)	₩ (122,884)
		10% Decrease	1,900,774	36,649	118,424	115,175	118,424	115,175
	Expense ratio	10% Increase	(460,782)	(6,494)	(19,589)	(19,100)	(19,589)	(19,100)
		10% Decrease	460,962	6,505	19,082	18,605	19,082	18,605
	Lapse ratio	10% Increase	(240,896)	(9,072)	8,172	8,062	8,172	8,062
		10% Decrease	250,858	9,393	(10,598)	(10,486)	(10,598)	(10,486)
2022	Loss ratio	10% Increase	(2,313,333)	(22,676)	(111,251)	(109,741)	(111,251)	(109,741)
		10% Decrease	2,464,413	23,217	110,821	109,361	110,821	109,361
	Expense ratio	10% Increase	(449,841)	(4,286)	(14,662)	(14,437)	(14,662)	(14,437)
		10% Decrease	449,895	4,286	14,608	14,383	14,608	14,383
	Lapse ratio	10% Increase	(271,820)	(8,559)	8,087	8,130	8,087	8,130
		10% Decrease	285,141	9,109	(8,540)	(8,551)	(8,540)	(8,551)

(*)

This refers to the change in revenue from contractual service margin adjustment estimated based on contractual service margin changes and adjustment ratio for the group of insurance contracts that will arise from additional assumption changes (10% increase/ decrease) relative to actuarial assumption changes in the 4th quarter of 2023.

b. Financial Impact of Financial Market Indicator Changes

The financial impact of changes in each financial market indicator on the Group's Parent Company and major subsidiaries as of December 31, 2023 and 2022 is as follows:

The tables below present the impact on the carrying amounts of insurance contract liabilities only, and the impact on the financial assets held is presented in Note 59. (3) under Market Risk Management.

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- Life Insurance

(in millions of Korean won)	Assumptions	Changes in Assumptions	Exposure ¹		Insurance Contract Margin and Reinsurance Contract Margin		Changes in Net Profit		Changes in Equity	
			Direct Insurance Exposure	Reinsurance Exposure	Insurance contract margin Increase (Decrease)	Reinsurance contract margin Increase (Decrease)	Before reflecting the impact of reinsurance contracts	After reflecting the impact of reinsurance contracts	Before reflecting the impact of reinsurance contracts	After reflecting the impact of reinsurance contracts
2023	Interest rate	100bp Increase	₩ 75,239,137	₩ (126,283)	₩ 1,012,798	₩ -	₩ 16,836	₩ 16,836	₩ 3,784,321	₩ 3,785,156
		100bp Decrease	75,239,137	(126,283)	(1,345,142)	-	(22,145)	(22,145)	(5,200,368)	(5,199,310)
	Stock price	10% Increase	75,239,137	(126,283)	(328,291)	-	(7,535)	(7,535)	(7,535)	(7,932)
		10% Decrease	75,239,137	(126,283)	320,927	-	7,394	7,394	7,394	7,840
2022	Interest rate	100bp Increase	70,651,877	(142,328)	791,795	-	13,736	13,736	3,469,613	3,474,125
		100bp Decrease	70,651,877	(142,328)	(1,218,372)	-	(20,296)	(20,296)	(5,125,469)	(5,123,604)
	Stock price	10% Increase	70,651,877	(142,328)	(292,336)	-	(6,263)	(6,263)	(6,263)	(6,524)
		10% Decrease	70,651,877	(142,328)	286,928	-	6,169	6,169	6,169	6,462

¹ Present value estimates of future cash flows for insurance contracts linked to each financial market indicator as of December 31, 2023 and 2022.

- Non-life Insurance

(in millions of Korean won)	Assumptions	Changes in Assumptions	Exposure ¹		Insurance Contract Margin and Reinsurance Contract Margin		Changes in Net Profit		Changes in Equity	
			Direct Insurance Exposure	Reinsurance Exposure	Insurance contract margin Increase (Decrease)	Reinsurance contract margin Increase (Decrease)	Before reflecting the impact of reinsurance contracts	After reflecting the impact of reinsurance contracts	Before reflecting the impact of reinsurance contracts	After reflecting the impact of reinsurance contracts
2023	Interest rate	100bp Increase	₩ 6,187,876	₩ (75,390)	₩ -	₩ -	₩ -	₩ -	₩ 1,656,105	₩ 1,639,053
		100bp Decrease	6,187,876	(75,390)	-	-	-	-	(2,001,785)	(1,980,026)
2022	Interest rate	100bp Increase	5,040,561	(75,131)	-	-	-	-	1,347,314	1,341,424
		100bp Decrease	5,040,561	(75,131)	-	-	-	-	(1,608,928)	(1,601,326)

¹ Present value estimates of future cash flows for insurance contracts linked to each financial market indicator as of December 31, 2023 and 2022.

Hanwha Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2023 and 2022

⑤ Liquidity Risk Associated with Insurance Contracts

- a. The undiscounted future net cash flows of insurance contract liabilities of the parent company and major subsidiaries as of December 31, 2023 and 2022, are as follows:

(in millions of Korean won)		Less than 1 year	1 to 2 years	2 to 3 years	3 to 4 years	4 to 5 years	5 to 10 years	More than 10 years	Total
2023	Insurance contract liability	₩ 1,409,642	₩ 2,000,695	₩ 2,019,966	₩ 6,463,864	₩ 2,709,061	₩ 50,260,180	₩ 132,608,972	₩ 197,472,380
	Reinsurance contract liability(asset)	(4,250)	(4,410)	(4,473)	(4,571)	(4,899)	(30,413)	(120,927)	(173,943)
	Total	₩ 1,405,392	₩ 1,996,285	₩ 2,015,493	₩ 6,459,293	₩ 2,704,162	₩ 50,229,767	₩ 132,488,045	₩ 197,298,437
2022	Insurance contract liability	₩ 2,389,079	₩ 1,284,595	₩ 2,858,238	₩ 2,859,935	₩ 8,119,739	₩ 44,804,835	₩ 131,507,142	₩ 193,823,564
	Reinsurance contract liability(asset)	2,220	(4,085)	(4,093)	(4,162)	(4,454)	(26,209)	(64,178)	(104,962)
	Total	₩ 2,391,299	₩ 1,280,510	₩ 2,854,145	₩ 2,855,772	₩ 8,115,285	₩ 44,778,626	₩ 131,442,964	₩ 193,718,602

(*) This is on a cash flow basis before discounting for the present value estimation of future cash flows of insurance contract liabilities.

- b. The amounts payable to policyholders upon demand and the carrying amount of the corresponding insurance contract liabilities related to the contracts of the parent company and major subsidiary companies as of December 31, 2023 and 2022, are as follows:

(in millions of Korean won)

2023		2022	
Insurance contract liabilities ¹	Amount payable upon demand	Insurance contract liabilities ¹	Amount payable upon demand
₩ 103,639,628	₩ 108,249,933	₩ 99,156,069	₩ 105,848,212

¹ This represents the present value estimate of future cash flows as of the end of the reporting period for insurance contracts associated with the amount payable upon demand.

Hanwha Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2023 and 2022

⑥ Changes in insurance claims

Changes in insurance claims for the Company and its significant subsidiaries for each of the two years in the period ended December 31, 2023 are as follows:

- 2023
- Life Insurance

<i>(in millions of Korean won)</i>	1 years	2 years	3 years	4 years	5 years	Total
Accumulated insurance claim paid						
FYD-4	₩ 1,434,961	₩ 1,699,403	₩ 1,732,583	₩ 1,747,677	₩ 1,753,811	₩
FYD-3	1,422,818	1,692,507	1,724,730	1,739,236	-	
FYD-2	1,565,865	1,859,750	1,898,683	-	-	
FYD-1	1,634,365	1,953,655	-	-	-	
FYD	1,745,388	-	-	-	-	
Estimated insurance claim paid						
FYD-4	1,434,961	1,699,403	1,732,583	1,747,677	1,762,169	
FYD-3	1,422,818	1,692,507	1,724,730	1,739,236	1,753,008	
FYD-2	1,565,865	1,859,750	1,898,683	1,914,640	1,929,681	
FYD-1	1,634,365	1,953,655	1,992,083	2,008,954	2,024,892	
FYD	1,745,388	2,093,495	2,136,733	2,155,711	2,174,329	
Estimated additional payments by year of development	-	348,107	81,667	51,807	71,727	553,308
Reserve adjustments:						
Prior accident year development, etc. ¹	-	-	-	-	-	2,147,844
Present value effect	-	-	-	-	-	(19,644)
Risk adjustment	-	-	-	-	-	22,431
Incurred claims liability carrying amount	-	-	-	-	-	2,703,939

¹ This amount includes provisions for cost evaluation and estimated claims investigation expenses.

Hanwha Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2023 and 2022

- Non-life Insurance: Long-term

<i>(in millions of Korean won)</i>	1 years	2 years	3 years	4 years	5 years	6 years	7 years	Total
Accumulated insurance claim paid								
FYD-6	₩ 868,907	₩ 1,230,556	₩ 1,282,647	₩ 1,300,542	₩ 1,306,559	₩ 1,309,608	₩ 1,311,645	₩
FYD-5	982,203	1,430,973	1,491,417	1,513,858	1,520,971	1,525,530	-	
FYD-4	1,190,935	1,681,245	1,750,699	1,773,314	1,782,265	-	-	
FYD-3	1,254,986	1,757,154	1,821,492	1,847,058	-	-	-	
FYD-2	1,393,740	1,900,561	1,973,980	-	-	-	-	
FYD-1	1,397,999	1,947,322	-	-	-	-	-	
FYD	1,450,075	-	-	-	-	-	-	
Estimated insurance claim paid								
FYD-6	868,907	1,230,556	1,282,647	1,300,542	1,306,559	1,309,608	1,312,820	
FYD-5	982,203	1,430,973	1,491,417	1,513,858	1,520,971	1,525,530	1,529,105	
FYD-4	1,190,935	1,681,245	1,750,699	1,773,314	1,782,265	1,789,232	1,790,598	
FYD-3	1,254,986	1,757,154	1,821,492	1,847,058	1,859,835	1,862,582	1,863,885	
FYD-2	1,393,740	1,900,561	1,973,980	2,010,654	2,015,341	2,018,254	2,019,589	
FYD-1	1,397,999	1,947,322	2,057,556	2,067,249	2,072,230	2,075,386	2,076,861	
FYD	1,450,075	2,117,090	2,147,741	2,158,094	2,163,440	2,166,855	2,168,467	
Estimated additional payments by year of development	-	667,015	140,885	56,720	27,792	19,197	11,841	923,450
Reserve adjustments:								
Prior accident year development, etc. ¹	-	-	-	-	-	-	-	302,863
Present value effect	-	-	-	-	-	-	-	(27,203)
Risk adjustment	-	-	-	-	-	-	-	35,947
Incurred claims liability carrying amount	-	-	-	-	-	-	-	1,235,057

¹ This amount includes provisions for cost evaluation and estimated claims investigation expenses.

Hanwha Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2023 and 2022

- General

(in millions of Korean won)

	1 years	2 years	3 years	4 years	5 years	6 years	7 years	Total
Accumulated insurance claim paid								
FYD-6	₩ 12,682	₩ 24,897	₩ 30,848	₩ 33,536	₩ 34,753	₩ 35,575	₩ 35,943	₩
FYD-5	13,282	24,740	28,705	31,168	32,827	34,202	-	
FYD-4	106,553	166,466	182,869	188,862	191,704	-	-	
FYD-3	97,095	162,837	177,481	182,526	-	-	-	
FYD-2	110,826	165,181	176,621	-	-	-	-	
FYD-1	122,734	188,567	-	-	-	-	-	
FYD	159,616	-	-	-	-	-	-	
Estimated insurance claim paid								
FYD-6	12,682	24,897	30,848	33,536	34,753	35,575	36,538	
FYD-5	13,282	24,740	28,705	31,168	32,827	34,202	35,444	
FYD-4	106,553	166,466	182,869	188,862	191,704	196,676	196,718	
FYD-3	97,095	162,837	177,481	182,526	189,472	189,615	189,661	
FYD-2	110,826	165,181	176,621	188,615	189,194	189,337	189,361	
FYD-1	122,734	188,567	218,905	219,817	220,327	220,443	220,469	
FYD	159,616	260,161	264,572	265,628	266,181	266,294	266,299	
Estimated additional payments by year of development	-	100,545	34,750	13,961	8,589	5,487	1,981	165,313
Reserve adjustments:								
Prior accident year development, etc. ¹	-	-	-	-	-	-	-	127,708
Present value effect	-	-	-	-	-	-	-	(13,242)
Risk adjustment	-	-	-	-	-	-	-	35,634
Incurred claims liability carrying amount	-	-	-	-	-	-	-	315,413

¹ This amount includes provisions for cost evaluation and estimated claims investigation expenses.

Hanwha Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2023 and 2022

- Automobile

(in millions of Korean won)	1 years	2 years	3 years	4 years	5 years	6 years	7 years	8 years	9 years	10 years	Total
Accumulated insurance claim paid											
FYD-9	₩ 396,419	₩ 468,493	₩ 479,806	₩ 485,913	₩ 488,753	₩ 490,028	₩ 490,499	₩ 492,114	₩ 492,344	₩ 492,456	₩
FYD-8	404,265	470,671	483,320	491,547	498,373	504,049	504,895	506,731	506,899	-	
FYD-7	437,542	510,012	523,123	529,353	532,837	535,175	536,266	536,653	-	-	
FYD-6	477,272	567,305	582,897	590,551	594,036	595,741	596,982	-	-	-	
FYD-5	534,101	636,635	655,109	662,464	667,596	668,782	-	-	-	-	
FYD-4	563,207	678,241	692,937	701,042	705,817	-	-	-	-	-	
FYD-3	499,088	574,174	585,432	592,808	-	-	-	-	-	-	
FYD-2	445,334	509,069	518,101	-	-	-	-	-	-	-	
FYD-1	427,329	499,171	-	-	-	-	-	-	-	-	
FYD	430,056	-	-	-	-	-	-	-	-	-	
Estimated insurance claim paid											
FYD-9	396,419	468,493	479,806	485,913	488,753	490,028	490,499	492,114	492,344	493,585	
FYD-8	404,265	470,671	483,320	491,547	498,373	504,049	504,895	506,731	506,899	508,776	
FYD-7	437,542	510,012	523,123	529,353	532,837	535,175	536,266	536,653	537,955	539,172	
FYD-6	477,272	567,305	582,897	590,551	594,036	595,741	596,982	598,907	599,603	600,924	
FYD-5	534,101	636,635	655,109	662,464	667,596	668,782	672,223	672,962	673,681	675,084	
FYD-4	563,207	678,241	692,937	701,042	705,817	710,713	712,138	712,968	713,781	715,397	
FYD-3	499,088	574,174	585,432	592,808	600,687	602,599	603,760	604,406	605,055	606,395	
FYD-2	445,334	509,069	518,101	530,231	531,833	533,375	534,344	534,865	535,398	536,548	
FYD-1	427,329	499,171	516,360	520,968	522,468	523,901	524,812	525,295	525,793	526,872	
FYD	430,056	511,123	517,833	522,416	523,900	525,328	526,220	526,702	527,193	528,222	
Estimated additional payments by year of development Reserve adjustments: Prior accident year development, etc. ¹	-	81,067	23,899	21,320	12,466	11,211	8,798	5,627	5,702	13,160	183,251
Present value effect	-	-	-	-	-	-	-	-	-	-	(11,400)
Risk adjustment	-	-	-	-	-	-	-	-	-	-	13,368
Incurred claims liability carrying amount	-	-	-	-	-	-	-	-	-	-	200,335

¹ This amount includes provisions for cost evaluation and estimated claims investigation expenses.

Hanwha Corporation and its subsidiaries
Notes to the consolidated financial statements
December 31, 2023 and 2022

- 2022
- Life-Insurance

<i>(in millions of Korean won)</i>	1 years	2 years	3 years	4 years	5 years	Total
Accumulated insurance claim paid						
FYD-4	₩ 1,366,800	₩ 1,623,605	₩ 1,654,697	₩ 1,668,361	₩ 1,673,764	₩
FYD-3	1,441,730	1,707,303	1,740,542	1,755,407	-	
FYD-2	1,429,690	1,700,338	1,731,787	-	-	
FYD-1	1,572,486	1,864,385	-	-	-	
FYD	1,582,982	-	-	-	-	
Estimated insurance claim paid						
FYD-4	1,366,800	1,623,605	1,654,697	1,668,361	1,682,096	
FYD-3	1,441,730	1,707,303	1,740,542	1,755,407	1,769,443	
FYD-2	1,429,690	1,700,338	1,731,787	1,745,928	1,759,169	
FYD-1	1,572,486	1,864,385	1,899,017	1,914,372	1,928,594	
FYD	1,582,982	1,875,340	1,909,729	1,925,092	1,939,225	
Estimated additional payments by year of development	-	292,357	69,021	44,859	63,964	470,202
Reserve adjustments:						
Prior accident year development, etc. ¹	-	-	-	-	-	2,508,797
Present value effect	-	-	-	-	-	(18,521)
Risk adjustment	-	-	-	-	-	28,147
Incurred claims liability carrying amount	-	-	-	-	-	2,988,625

¹ This amount includes provisions for cost evaluation and estimated claims investigation expenses.

Hanwha Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2023 and 2022

- Non-life Insurance: Long-term

<i>(in millions of Korean won)</i>	1 years	2 years	3 years	4 years	5 years	6 years	7 years	Total
Accumulated insurance claim paid								
FYD-6	₩ 774,060	₩ 1,088,248	₩ 1,131,821	₩ 1,146,833	₩ 1,151,300	₩ 1,154,125	₩ 1,155,623	₩
FYD-5	852,749	1,207,612	1,258,761	1,276,346	1,282,290	1,285,311	-	
FYD-4	963,865	1,404,104	1,463,413	1,485,502	1,492,518	-	-	
FYD-3	1,168,562	1,649,578	1,717,754	1,740,006	-	-	-	
FYD-2	1,231,582	1,724,368	1,787,511	-	-	-	-	
FYD-1	1,368,211	1,865,655	-	-	-	-	-	
FYD	1,372,856	-	-	-	-	-	-	
Estimated insurance claim paid								
FYD-6	774,060	1,088,248	1,131,821	1,146,833	1,151,300	1,154,125	1,156,659	
FYD-5	852,749	1,207,612	1,258,761	1,276,346	1,282,290	1,285,311	1,288,061	
FYD-4	963,865	1,404,104	1,463,413	1,485,502	1,492,518	1,498,036	1,499,152	
FYD-3	1,168,562	1,649,578	1,717,754	1,740,006	1,751,856	1,754,036	1,755,216	
FYD-2	1,231,582	1,724,368	1,787,511	1,819,243	1,823,431	1,825,655	1,826,789	
FYD-1	1,368,211	1,865,655	1,966,135	1,974,834	1,979,333	1,981,711	1,982,897	
FYD	1,372,856	2,003,178	2,030,681	2,040,087	2,045,018	2,047,655	2,049,018	
Estimated additional payments by year of development	-	630,322	127,984	49,837	25,468	14,937	9,767	858,314
Reserve adjustments:								
Prior accident year development, etc. ¹	-	-	-	-	-	-	-	283,604
Present value effect	-	-	-	-	-	-	-	(26,364)
Risk adjustment	-	-	-	-	-	-	-	34,704
Incurred claims liability carrying amount	-	-	-	-	-	-	-	1,150,258

¹ This amount includes provisions for cost evaluation and estimated claims investigation expenses.

Hanwha Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2023 and 2022

- General

(in millions of Korean won)

	1 years	2 years	3 years	4 years	5 years	6 years	7 years	Total
Accumulated insurance claim paid								
FYD-6	₩ 8,920	₩ 19,054	₩ 23,073	₩ 27,151	₩ 25,957	₩ 26,571	₩ 26,850	₩
FYD-5	12,682	24,897	30,848	33,536	34,753	35,575	-	
FYD-4	102,748	169,647	190,323	195,394	198,870	-	-	
FYD-3	106,553	166,466	182,869	188,862	-	-	-	
FYD-2	97,095	162,837	177,481	-	-	-	-	
FYD-1	110,826	165,181	-	-	-	-	-	
FYD	122,734	-	-	-	-	-	-	
Estimated insurance claim paid								
FYD-6	8,920	19,054	23,073	27,151	25,957	26,571	27,151	
FYD-5	12,682	24,897	30,848	33,536	34,753	35,575	36,565	
FYD-4	102,748	169,647	190,323	195,394	198,870	203,708	203,728	
FYD-3	106,553	166,466	182,869	188,862	193,126	193,364	193,383	
FYD-2	97,095	162,837	177,481	186,667	186,911	187,130	187,153	
FYD-1	110,826	165,181	188,297	187,452	187,592	187,846	187,858	
FYD	122,734	214,338	217,102	215,608	215,658	215,851	215,859	
Estimated additional payments by year of development	-	91,604	25,879	6,847	4,699	5,741	1,372	136,143
Reserve adjustments:								
Prior accident year development, etc. ¹	-	-	-	-	-	-	-	90,044
Present value effect	-	-	-	-	-	-	-	(7,716)
Risk adjustment	-	-	-	-	-	-	-	34,037
Incurred claims liability carrying amount	-	-	-	-	-	-	-	252,508

¹ This amount includes provisions for cost evaluation and estimated claims investigation expenses.

Hanwha Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2023 and 2022

- Automobile

<i>(in millions of Korean won)</i>	1 years	2 years	3 years	4 years	5 years	6 years	7 years	8 years	9 years	10 years	Total
Accumulated insurance claim paid											
FYD-9	₩ 364,289	₩ 431,825	₩ 444,832	₩ 449,667	₩ 453,752	₩ 456,121	₩ 458,295	₩ 458,755	₩ 459,595	₩ 459,902	₩
FYD-8	396,471	468,572	479,893	486,002	488,844	490,126	490,598	492,213	492,444	-	
FYD-7	404,265	470,671	483,320	491,547	498,373	504,049	504,895	506,731	-	-	
FYD-6	437,542	510,012	523,123	529,353	532,837	535,175	536,266	-	-	-	
FYD-5	477,272	567,305	582,897	590,551	594,036	595,741	-	-	-	-	
FYD-4	534,101	636,635	655,109	662,464	667,596	-	-	-	-	-	
FYD-3	563,207	678,241	692,937	701,042	-	-	-	-	-	-	
FYD-2	499,088	574,174	585,432	-	-	-	-	-	-	-	
FYD-1	445,335	509,312	-	-	-	-	-	-	-	-	
FYD	427,558	-	-	-	-	-	-	-	-	-	
Estimated insurance claim paid											
FYD-9	364,289	431,825	444,832	449,667	453,752	456,121	458,295	458,755	459,595	462,407	
FYD-8	396,471	468,572	479,893	486,002	488,844	490,126	490,598	492,213	492,444	494,437	
FYD-7	404,265	470,671	483,320	491,547	498,373	504,049	504,895	506,731	506,781	509,373	
FYD-6	437,542	510,012	523,123	529,353	532,837	535,175	536,266	538,504	538,173	540,581	
FYD-5	477,272	567,305	582,897	590,551	594,036	595,741	599,613	600,043	599,682	602,287	
FYD-4	534,101	636,635	655,109	662,464	667,596	672,490	674,579	675,024	674,664	677,317	
FYD-3	563,207	678,241	692,937	701,042	710,373	712,480	714,781	715,261	714,879	717,781	
FYD-2	499,088	574,174	585,432	599,272	601,788	603,414	605,197	605,556	605,287	607,477	
FYD-1	445,335	509,312	529,884	534,057	536,262	537,700	539,273	539,586	539,351	541,286	
FYD	427,558	511,907	519,344	523,191	525,226	526,543	527,988	528,278	528,066	529,823	
Estimated additional payments by year of development	-	84,350	28,009	21,860	16,087	11,382	13,062	4,557	(2,102)	23,541	200,746
Reserve adjustments:											
Prior accident year development, etc. ¹	-	-	-	-	-	-	-	-	-	-	9,156
Present value effect	-	-	-	-	-	-	-	-	-	-	(14,142)
Risk adjustment	-	-	-	-	-	-	-	-	-	-	12,899
Incurred claims liability carrying amount	-	-	-	-	-	-	-	-	-	-	208,659

¹ This amount includes provisions for cost evaluation and estimated claims investigation expenses.

Hanwha Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2023 and 2022

⑦ The carrying amounts related to insurance contracts and investment contracts

The carrying amounts of insurance contracts for the Parent Company and significant subsidiaries for each of the two years in the period ended December 31, 2023 are as follows:

- 2023
- Life Insurance

<i>(in millions of Korean won)</i>	Death	Health	Pension Savings	Variable Insurance	Others	Subtotal
Insurance contract						
Insurance contract assets	₩ -	₩ -	₩ -	₩ -	₩ -	₩ -
Reinsurance contract assets	-	(148,854)	-	-	-	(148,854)
Insurance contract liabilities	16,614,709	10,803,565	46,329,651	15,343,091	47,923	89,138,938
Reinsurance contract liabilities	20,716	-	-	-	7,320	28,036
Total	₩ 16,635,425	₩ 10,654,711	₩ 46,329,651	₩ 15,343,091	₩ 55,243	₩ 89,018,120

- Non-life Insurance

<i>(in millions of Korean won)</i>	Long-term	General	Automobile	Subtotal
Insurance contract				
Insurance contract assets	₩ (16)	₩ -	₩ -	₩ (16)
Reinsurance contract assets	(95,337)	(285,842)	(41,441)	(422,620)
Insurance contract liabilities	12,272,724	552,181	618,357	13,443,263
Reinsurance contract liabilities	-	-	-	-
Total	₩ 12,177,371	₩ 266,339	₩ 576,916	₩ 13,020,627

- Total

<i>(in millions of Korean won)</i>	Total
Insurance contract	
Insurance contract assets	₩ (16)
Reinsurance contract assets	(571,474)
Insurance contract liabilities	102,582,201
Reinsurance contract liabilities	28,036
Total	₩ 102,038,747

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- 2022

- Life Insurance

<i>(in millions of Korean won)</i>	Death	Health	Pension Savings	Variable Insurance	Others	Subtotal
Insurance contract						
Insurance contract assets	₩ -	₩ -	₩ -	₩ -	₩ -	₩ -
Reinsurance contract assets	-	(152,710)	-	-	-	(152,710)
Insurance contract liabilities	14,506,144	10,842,516	45,567,438	14,298,158	50,399	85,264,654
Reinsurance contract liabilities	22,810	-	-	-	-	22,810
Total	₩ 14,528,954	₩ 10,869,806	₩ 45,567,438	₩ 14,298,158	₩ 50,399	₩ 85,134,754

- Non-life Insurance

<i>(in millions of Korean won)</i>	Long-term	General	Automobile	Subtotal
Insurance contract				
Insurance contract assets	₩ (16)	₩ (10,355)	₩ -	₩ (10,371)
Reinsurance contract assets	(239,681)	(275,057)	(111,464)	(626,203)
Insurance contract liabilities	10,887,152	468,869	640,061	11,996,082
Reinsurance contract liabilities	7,601	2,317	-	9,918
Total	₩ 10,655,056	₩ 185,774	₩ 528,597	₩ 11,369,426

- Total

<i>(in millions of Korean won)</i>	Total
Insurance contract	
Insurance contract assets	₩ (10,371)
Reinsurance contract assets	(778,913)
Insurance contract liabilities	97,260,736
Reinsurance contract liabilities	32,728
Total	₩ 96,504,180

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⑧ Concentration of Insurance Risk and Reinsurance Policy

The Group calculates the concentration of risk considering past experience rates related to issued insurance contracts and held reinsurance contracts. Additionally, it identifies common characteristics based on the calculated concentration of risk.

- a. The present value estimates of future cash flows for insurance types that the Parent Company and major subsidiaries consider significant are as follows:

(in millions
of Korean
won)

		2023			2022		
		Insurance contract liability(asset)	Reinsurance contract liability(asset)	Total	Insurance contract liability(asset)	Reinsurance contract liability(asset)	Total
Life	Death	₩ 16,614,709	₩ 20,716	₩ 16,635,425	₩ 14,506,144	₩ 22,810	₩ 14,528,954
	Health	10,803,565	(148,854)	10,654,711	10,842,516	(152,710)	10,689,806
	Pension Savings	46,329,651	-	46,329,651	45,567,438	-	45,567,438
	Variable Insurance	15,343,091	-	15,343,091	14,298,158	-	14,298,158
	Others	47,923	7,320	55,243	50,399	-	50,399
	Subtotal	₩ 89,138,938	₩ (120,817)	₩ 89,018,121	₩ 85,264,654	₩ (129,900)	₩ 85,134,754
Long-term	Personal injury	₩ 5,949,264	₩ (106)	₩ 5,949,159	₩ 4,682,933	₩ 5,205	₩ 4,688,138
	Illness or Disease	4,339,558	(85,152)	4,254,406	3,931,987	(220,619)	3,711,368
	Property	399,755	(3,676)	396,079	413,381	(2,638)	410,743
	Pensions	916,661	-	916,661	904,991	(220)	904,771
	Savings	488,344	-	488,344	686,256	(118)	686,138
	Others	179,126	(6,404)	172,722	267,589	(13,691)	253,899
	Subtotal	₩ 12,272,709	₩ (95,337)	₩ 12,177,371	₩ 10,887,136	₩ (232,080)	₩ 10,655,057
General	Fire	₩ 14,117	₩ (7,861)	₩ 6,256	₩ 34,203	₩ 2,317	₩ 36,519
	Comprehensive	202,150	(101,445)	100,706	167,919	(131,423)	36,496
	Marine	46,588	(25,454)	21,135	38,544	(24,756)	13,789
	Worker's compensation	8,521	(1,063)	7,458	10,198	(2,331)	7,867
	Liability	81,002	(46,422)	34,581	67,659	(32,895)	34,764
	Personal accident	68,045	(12,196)	55,849	60,349	(15,624)	44,725
	Engineering	112,179	(73,789)	38,390	89,171	(51,996)	37,174
	Guarantee	1	(5)	(4)	-	(118)	(117)
	Others	16,331	(14,134)	2,197	(10,355)	(10,768)	(21,123)
	Overseas	3,247	(3,474)	(227)	827	(5,147)	(4,320)
	Subtotal	₩ 552,181	₩ (285,842)	₩ 266,339	₩ 458,514	₩ (272,741)	₩ 185,773
Automobile		₩ 618,357	₩ (41,441)	₩ 576,916	₩ 640,061	₩ (111,464)	₩ 528,596
Total		₩ 102,582,185	₩ (543,437)	₩ 102,038,748	₩ 97,250,365	₩ (746,185)	₩ 96,504,180

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- b. The present value estimates of future cash flows for insurance contracts with coverage provided by the parent company and major subsidiaries, both domestically and internationally, are as follows:

(in millions of Korean won)

	2023			2022		
	Insurance contract liability(asset)	Reinsurance contract liability(asset)	Total	Insurance contract liability(asset)	Reinsurance contract liability(asset)	Total
Domestics	₩ 102,578,938	₩ (539,963)	₩ 102,038,975	₩ 97,249,538	₩ (741,038)	₩ 96,508,500
Overseas	3,247	(3,474)	(227)	827	(5,147)	(4,320)
Total	₩ 102,582,185	₩ (543,437)	₩ 102,038,748	₩ 97,250,365	₩ (746,185)	₩ 96,504,180

c. Reinsurance policy

The Group annually formulates reinsurance operating strategies for each type of insurance (life, general, automobile), which are approved by the Risk Management Committee and verified for compliance by the Reinsurance Practices Committee.

Reinsurance operating strategies are established based on an assessment of the Group's underlying assets, level of insurance risk, and reinsurance costs. They encompass the objectives of reinsurance transactions, plans for retaining risk and ceding reinsurance treaties, risk retention limits, and criteria for selecting reinsurers and reinsurance intermediaries.

The carrying amounts of reinsurance contract assets and liabilities classified for each credit rating of reinsurance companies as of December 31, 2023 and 2022 is as follows:

(in millions of Korean won)

	2023				2022			
	More than AA-	A+ ~ A-	Below BBB+	Total	More than AA-	A+ ~ A-	Below BBB+	Total
Reinsurance contract assets	₩ (14,013)	₩ 532,858	₩ 52,629	₩ 571,474	₩ 785,577	₩ 63,557	₩ 49,761	₩ 898,895
Reinsurance contract liabilities	15,354	12,682	-	28,036	22,810	-	-	22,810
Net Reinsurance contract assets(liabilities)	(29,367)	520,175	52,629	543,437	632,867	63,557	49,761	746,185
Book value for the top 5 reinsurance companies	22,256	290,401	18,289	330,946	457,796	63,550	23,645	544,991
Ratio for top 5 reinsurance companies	4.10%	53.44%	3.37%	60.90%	61.35%	8.52%	3.17%	73.04%

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3) Credit risk management

① Concept

Credit risk is the risk of loss due to counterparty default or credit rating downgrades.

② Measurement method

The measurement of credit risk utilizes both standard models and internal models simultaneously. The standard model (Article 7-2, Paragraph 4 of the Insurance Business Regulation) measures the risk amount according to the Financial Supervisory Service's solvency regime (K-ICS). The internal model calculates credit risk amounts based on the methodology of the standard model, but applies credit risk coefficients based on internal credit ratings and estimated default rates for corporate and personal loans, resulting in some differences from the standard model.

③ Management method

a. Limit Management

The Group establishes credit risk exposure limits based on internal models and reports the results of quarterly calculations to the Risk Management Committee for monitoring and management.

b. Individual Assessment for Borrowers and Investment Products

The Group conducts internal assessments through detailed analysis by the review department for individual borrowers and investment products during asset management. Based on these assessments, investments are made in eligible borrowers and investment products.

c. Diversification and Management Limits

To prevent concentration risks arising from investments, the Group sets limits on an industry, group, borrower, and product basis, managing risks associated with lower-grade assets by setting limits.

d. Overlapping Management of High-Risk Assets

For high-risk assets (derivatives and alternative investments), rigorous analysis is conducted by the risk management team for risk assessment during new investments, including analysis of repayment capacity by the review department, ensuring a more intensive analysis compared to low-risk assets.

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④ Maximum Exposure to Credit Risk

The Group's maximum exposure to credit risk, excluding collateral value for financial products held as of December 31, 2023 and 2022 is as follows:

<i>(in millions of Korean won)</i>		2023	2022
Cash and Cash Equivalents (*1)	₩	3,664,104	₩ 2,707,538
Financial Assets at Fair Value through Profit or Loss (*2)		13,562,740	17,096,186
Financial Assets at Fair Value through Other Comprehensive Income (*2)		48,854,446	30,090,764
Securities at Amortized Cost		11,961,200	31,896,062
Loans Receivable at Amortized Cost		22,728,028	26,086,580
Other Financial Assets at Amortized Cost		4,268,442	4,135,825
Derivative Financial Instruments for Risk Hedging Purposes		413,932	467,701
Subtotal	₩	105,452,892	₩ 112,480,656
Unused Loan Commitments		1,202,670	1,146,496
Total	₩	106,655,562	₩ 113,627,152

(*1) This excludes cash held directly within Cash and Cash Equivalents on the statement of financial position.

(*2) This excludes financial instruments with equity nature from Financial Assets at Fair Value through Profit or Loss and Financial Assets at Fair Value through Other Comprehensive Income on the statement of financial position.

⑤ Credit risk exposure by credit rating.

<i>(in millions of Korean won)</i>		12 months Expected Credit Loss		Lifetime Expected Credit Loss		Total
			Impairment Not Recognized		Impairment Recognized	
Financial Assets at Fair Value through Other Comprehensive Income	₩	48,854,446	₩	-	₩	- ₩ 48,854,446
Securities at Amortized Cost		11,408,673		-		- 11,408,673
Loans Receivable at Amortized Cost		21,745,519		883,429		99,080 22,728,028
Other Financial Assets at Amortized Cost		4,265,487		2,481		474 4,268,442
Total	₩	86,274,125	₩	885,910	₩	99,554 ₩ 87,259,589

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⑥ Concentration Analysis of Credit Risk

- a. The concentration of credit risk in major industries for loans receivable as of December 31, 2023 and 2022 is as follows:

- 2023

<i>(in millions of Korean won)</i>	Finance and Insurance Industry	Construction Industry	Real Estate and Rental Industry	Electric, Gas, Steam, and Water Supply Industry etc.	Others	Total
Real Estate Mortgage Loans	₩ 1,168,092	₩ 650	₩ 2,385,130	₩ -	₩ 5,373,509	₩ 8,927,381
Credit Loans	408,566	175,398	2,044,301	1,152,300	4,863,862	8,644,427
Guaranteed Loans	-	-	849,500	-	80,834	930,334
Other Loans	633,103	57,677	411,034	85,171	3,038,901	4,225,886
Total	₩ 2,209,761	₩ 233,725	₩ 5,689,965	₩ 1,237,471	₩ 13,357,106	₩ 22,728,028

- 2022

<i>(in millions of Korean won)</i>	Finance and Insurance Industry	Construction Industry	Real Estate and Rental Industry	Electric, Gas, Steam, and Water Supply Industry etc.	Others	Total
Call Loans	₩ 24	₩ -	₩ -	₩ -	₩ -	₩ 24
Real Estate Mortgage Loans	1,491,092	720	2,378,741	-	6,085,822	9,956,375
Credit Loans	157,114	303,885	2,129,378	1,149,977	5,436,661	9,177,015
Guaranteed Loans	-	-	890,619	-	94,710	985,329
Other Loans	1,258,249	230,608	609,801	90,907	3,778,272	5,967,837
Total	₩ 2,906,479	₩ 535,213	₩ 6,008,539	₩ 1,240,884	₩ 15,395,465	₩ 26,086,580

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- b. The concentration of credit risk in major industries for debt securities as of December 31, 2023 and 2022 is as follows:

- 2023

<i>(in millions of Korean won)</i>	Public administration	Finance and Insurance Industry	Construction Industry	Real Estate and Rental Industry	Electric, Gas, Steam, and Water Supply Industry etc.	Others	Total
Financial Assets at Fair Value through Profit or Loss	₩ 2,792,431	₩ 7,684,445	₩ 47,620	₩ 66,361	₩ 216,892	₩ 2,754,991	₩ 13,562,740
Financial Assets at Fair Value through Other Comprehensive Income	6,394,214	3,246,929	4,810,961	161,716	4,003,298	30,237,328	48,854,446
Financial Assets at Amortized Cost	2,895,394	5,075,442	8,011	-	70,000	3,912,353	11,961,200
Total	₩ 12,082,039	₩ 16,006,816	₩ 4,866,592	₩ 228,077	₩ 4,290,190	₩ 36,904,672	₩ 74,378,386

- 2022

<i>(in millions of Korean won)</i>	Public administration	Finance and Insurance Industry	Construction Industry	Real Estate and Rental Industry	Electric, Gas, Steam, and Water Supply Industry etc.	Others	Total
Financial Assets at Fair Value through Profit or Loss	₩ 2,183,787	₩ 3,374,610	₩ 8,532	₩ -	₩ 318,739	₩ 11,210,518	₩ 17,096,186
Financial Assets at Fair Value through Other Comprehensive Income	5,153,292	5,314,169	1,654,309	108,231	3,770,806	14,089,957	30,090,764
Financial Assets at Amortized Cost	2,183,787	2,204,287	2,268,453	189,965	-	25,049,570	31,896,062
Total	₩ 9,520,866	₩ 10,893,066	₩ 3,931,294	₩ 298,196	₩ 4,089,545	₩ 50,350,045	₩ 79,083,012

Hanwha Corporation and its subsidiaries

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4) Market risk management

① Concept

Market risk refers to the risk of potential economic loss arising from fluctuations in market variables (such as interest rates, stock prices, real estate prices, and exchange rates) or insufficient diversification of asset portfolios. It is subdivided into five sub-risks: interest rate risk, equity risk, real estate risk, foreign exchange risk, and concentration risk.

② Measurement method

Market risk is measured using both standard models and internal models simultaneously. The standard model (Article 7-2, Paragraph 4 of the Insurance Business Regulations) measures risk exposure in accordance with the Korea Insurance Capital Standards (K-ICS) set by the Financial Supervisory Service. Internal models adjust certain calculation elements differently from standard models to measure risk exposure in a manner that better reflects economic realities, particularly regarding interest rate risk.

③ Management method

Limits for market risk exposure are set, and results are monitored and reported to the Risk Management Committee on a quarterly basis.

To manage interest rate risk, duration gap limits for assets/liabilities are set to minimize mismatched durations between assets and liabilities. Additionally, an Asset and Liability Management (ALM) investment strategy reflecting the cash flow characteristics of insurance liabilities is used to establish medium to long-term target portfolios. Guidelines reflecting market interest rates are established to manage interest rates applied to insurance products.

Loss limits are set for trading assets and high-risk assets to prevent additional losses by selling assets if losses exceed a certain level, thereby managing losses within predefined limits.

Investment limits are set for each product category to prevent concentration of investment in specific product categories.

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④ Market Risk

a. The current market risk exposure as of December 31, 2023 and 2022 is as follows:

(in millions of Korean won)

		Exposure ¹	
		2023 ²	2022 ²
Financial Assets at Fair Value through Profit or Loss	₩	47,621,919	₩ 30,982,860
Foreign currency denominated assets/liabilities		11,677,239	14,624,354
Derivative financial transactions		(903,677)	(740,550)
Total	₩	58,395,481	₩ 44,866,664

¹ The total market exposure differs from the simple sum due to foreign exchange positions.

² The above credit risk exposure amounts were measured based on the assets and liabilities evaluated applying KIFRS.

b. Sensitivity Analysis on Interest Rate and Other Risk Factors

The impact on net profit and capital based on sensitivity analysis conducted using exchange rates, interest rates, and stock prices as benchmarks, as per the results of scenario tests as of December 31, 2023 and 2022 is as follows:

(in millions of Korean won)

	Change	2023		2022	
		Changes in Net profit	Changes in Equity	Changes in Net profit	Changes in Equity
KRW/USD exchange rate	KRW 100 Decrease	₩ (17,923)	₩ (1,764)	₩ (43,337)	₩ 58
	KRW 100 Increase	17,911	1,752	43,311	(83)
Interest rate	100bp Decrease	734,475	6,949,936	353,201	3,024,488
	100bp Increase	(733,695)	(6,534,411)	(355,179)	(2,715,094)
Stock price	10% Decrease	(468,588)	2,380	(443,336)	(3,475)
	10% Increase	470,458	(510)	446,348	6,487

The sensitivity analysis methods and assumptions used in the above analysis remain materially unchanged compared to the previous period.

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⑤ Liquidity Risk Management

a. Concept

Liquidity risk refers to the risk of unexpected losses due to a shortage of liquid funds caused by mismatches in the maturity structure of assets and liabilities or sudden fluctuations in cash flows.

b. Management Method

The Group is fully committed to managing liquidity assets, taking into account the monthly cash flow plans of insurance and also ensuring rigorous daily forecasting and management of cash flows.

c. Analysis of Non-Derivative Financial Liabilities Maturity Profile

The maturity profile of non-derivative financial liabilities as of December 31, 2023 and 2022 is as follows:

- 2023

<i>(in millions of Korean won)</i>	Less than 3 months	3 to 6 months	6 to 12 months	More than 1 year	Total
Borrowings	₩ 5,106,011	₩ -	₩ -	₩ 5,876,122	₩ 10,982,133
Other financial liabilities	506,997	8,922	15,049	3,627,146	4,158,114
Loan agreements and investment agreements	1,689,723	-	58,256	5,366,612	7,114,591
Total	<u>₩ 7,302,731</u>	<u>₩ 8,922</u>	<u>₩ 73,305</u>	<u>₩ 14,869,880</u>	<u>₩ 22,254,838</u>

- 2022

<i>(in millions of Korean won)</i>	Less than 3 months	3 to 6 months	6 to 12 months	More than 1 year	Total
Borrowings	₩ 4,414,474	₩ 128,000	₩ -	₩ 5,305,956	₩ 9,848,430
Other financial liabilities	354,327	9,058	19,439	262,594	645,418
Loan agreements and investment agreements	1,292,207	-	247,723	6,787,758	8,327,688
Total	<u>₩ 6,061,008</u>	<u>₩ 137,058</u>	<u>₩ 267,162</u>	<u>₩ 12,356,308</u>	<u>₩ 18,821,536</u>

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⑥ Operational Risk Management

a. Concept

Operational risk refers to the potential for financial and non-financial losses due to inadequate internal processes, personnel, systems, or external events, reputation, and regulatory requirements. Operational risk management identifies weaknesses in internal controls and enhances the integrity and soundness of the Group through system enhancements.

b. Management Method

The Group classifies operational risks by event type (internal and external fraud, workplace safety, customer and product operational practices, loss of physical resources, business disruption and system failures, processing procedures management, etc.), causes, and business types, accumulating loss data. Based on this, Operational Value at Risk (Op-VaR) is measured and reported to the Risk Management Committee. Key Risk Indicators (KRI) such as the rate of new contract incomplete sales and acceptance refusal, Financial Supervisory Service (FSS) complaint counts, internal control violation counts, incomplete sales ratio, new lawsuit counts, and unfriendly news counts are set up for monitoring and reported to the Risk Management Committee on a quarterly basis.

(4) Fair Value Measurement in Financial Business

The Group has classified financial instruments measured at fair value on the statements of financial position into the following fair value hierarchy based on the input variables used in fair value measurement:

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

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- ① Details of financial assets and financial liabilities measured at fair value as of December 31, 2023 and 2022 are as follows:

- 2023

<i>(in millions of Korean won)</i>		Financial instruments	Level 1	Level 2	Level 3	Total
Financial asset	Financial Assets at Fair Value through Profit or Loss		₩ 11,666,205	₩ 17,935,461	₩ 18,312,608	₩ 47,914,274
	Financial Assets at Fair Value through Other Comprehensive Income		27,177,319	21,259,542	1,557,054	49,993,915
	Derivative assets		111	730,058	124,797	854,966
	Total		₩ 38,843,635	₩ 39,925,061	₩ 19,994,459	₩ 98,763,155
Financial liability	Financial Liabilities at Fair Value through Profit or Loss		₩ 246,774	₩ -	₩ 1,632,335	₩ 1,879,109
	Derivative liabilities		1,946	1,229,988	160,970	1,392,904
	Total		₩ 248,720	₩ 1,229,988	₩ 1,793,305	₩ 3,272,013

- 2022

<i>(in millions of Korean won)</i>		Financial instruments	Level 1	Level 2	Level 3	Total
Financial asset	Financial Assets at Fair Value through Profit or Loss		₩ 6,624,297	₩ 20,967,176	₩ 17,685,434	₩ 45,276,907
	Financial Assets at Fair Value through Other Comprehensive Income		16,848,964	17,562,196	2,027,576	36,438,736
	Derivative assets		1,015	846,271	160,032	1,007,318
	Total		₩ 23,474,276	₩ 39,375,643	₩ 19,873,042	₩ 82,722,961
Financial liability	Financial Liabilities at Fair Value through Profit or Loss		₩ 287,065	₩ -	₩ 2,482,245	₩ 2,769,310
	Derivative liabilities		5,356	2,020,533	281,030	2,306,919
	Total		₩ 292,421	₩ 2,020,533	₩ 2,763,275	₩ 5,076,229

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- ② Changes in financial instruments classified as Level 3 for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>		2023		2022
Opening balance	₩	17,109,766	₩	17,245,472
Purchase amount		2,321,537		5,490,897
Sales amount		(4,156,200)		(5,724,526)
Outflows from Level 3		-		(507,862)
Inflows to Level 3		250,866		-
Others ¹		(366,640)		580,064
Gain (loss) recognized in profit or loss		(202,863)		429,412
Gain (loss) recognized in other comprehensive income		26,127		(403,691)
Closing balance		18,201,154		17,109,766

¹ Includes changes due to changes in the scope of consolidation.

(5) Capital Risk Management

The purpose of capital management for the Group is to protect the ability to provide ongoing benefits to shareholders and stakeholders and to maintain an optimal capital structure to reduce the cost of capital.

The Group, like other companies within the same industry, manages its capital based on the capital adequacy ratio. The capital adequacy ratio is calculated by dividing net borrowings by total capital. Net borrowings are total borrowings (borrowings and bonds payable on the consolidated statement of financial position) minus cash and cash equivalents, while total capital is the sum of net borrowings added to total equity on the consolidated statement of financial position.

The capital adequacy ratio as of December 31, 2023 and 2022, is as follows.

<i>(in millions of Korean won)</i>		2023		2022
Total Borrowings	₩	30,306,774	₩	25,997,272
Deductions:				
Cash and Cash Equivalents		(8,528,739)		(9,596,195)
Net Borrowings (A)		21,778,035		16,401,077
Total Equity (B)		33,198,739		33,175,908
Total Capital (A+B)		54,976,774		49,576,985
Capital Adequacy Ratio (A/(A+B))		39.61%		33.08%

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60. Information about Non-controlling Interests

(1) Changes in accumulated non-controlling interests

The profit or loss allocated to non-controlling interests and accumulated non-controlling interests of subsidiaries that are material to the Group for each of the two years in the period ended December 31, 2023 is as follows:

(in millions of
Korean won)

2023

	Percentage of ownership (%)	Percentage of voting rights (%)	Accumulated non-controlling interests at the beginning of the year	Profit or loss allocated to non-controlling interests	Dividends paid to non- controlling interests	Others	Accumulated non-controlling interests at the end of the year
Hanwha Life Insurance Co., Ltd.	55.00	48.00	₩ 8,706,105	₩ 419,739	₩ (18,127)	₩ (1,723,798)	₩ 7,383,919
Hanwha Solutions Co., Ltd.	63.90	63.10	6,615,560	(126,293)	-	(913,797)	5,575,470
Hanwha Aerospace Co., Ltd.	66.00	66.00	2,038,129	661,529	(33,380)	34,725	2,701,003

(in millions of
Korean won)

2022

	Percentage of ownership (%)	Percentage of voting rights (%)	Accumulated non-controlling interests at the beginning of the year	Profit or loss allocated to non-controlling interests	Dividends paid to non- controlling interests	Others	Accumulated non-controlling interests at the end of the year
Hanwha Life Insurance Co., Ltd.	55.00	48.00	₩ 7,475,769	₩ 326,655	₩ (31,601)	₩ 935,282	₩ 8,706,105
Hanwha Solutions Co., Ltd.	63.90	63.20	5,115,535	382,048	-	1,117,977	6,615,560
Hanwha Aerospace Co., Ltd.	66.00	66.00	1,775,579	193,271	(23,366)	92,645	2,038,129

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(2) Summarized financial information on subsidiaries

The summarized financial information for each subsidiary with non-controlling interests that are material to the Group before intercompany eliminations is as follows:

1) Summarized consolidated statements of financial position as of December 31, 2023 and 2022 are as follows:

(in millions of Korean won)

	Hanwha Life Insurance Co., Ltd.	
	2023	2022
Assets for financial business	₩ 147,901,843	₩ 146,310,480
Liabilities for financial business	132,426,755	126,615,799
Equity	15,475,088	19,694,681

(in millions of Korean won)

	Hanwha Solutions Co., Ltd.	
	2023	2022
Current assets	₩ 8,704,888	₩ 8,573,295
Non-current assets	14,407,473	13,634,374
Assets for financial business	1,380,548	1,624,214
Current liabilities	7,688,754	6,808,491
Non-current liabilities	6,598,031	5,685,432
Liabilities for financial business	1,195,579	1,441,049
Equity	9,010,545	9,896,911

(in millions of Korean won)

	Hanwha Aerospace Co., Ltd.	
	2023	2022
Current assets	₩ 9,192,042	₩ 8,507,711
Non-current assets	10,350,858	6,644,116
Current liabilities	12,076,598	8,222,937
Non-current liabilities	2,782,077	3,010,580
Equity	4,684,225	3,918,310

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2) Summarized consolidated statements of comprehensive income for each of the two years in the period ended December 31, 2023 are as follows:

(in millions of Korean won)

	Hanwha Life Insurance Co., Ltd.			
	2023		2022	
Operating revenue	₩	1,057,044	₩	1,256,974
Profit for the year		825,981		1,170,477

(in millions of Korean won)

	Hanwha Solutions Co., Ltd.			
	2023		2022	
Operating revenue	₩	13,288,745	₩	13,130,752
Loss (Profit) for the year		(155,258)		366,023
Other comprehensive income		21,174		218,809
Total comprehensive loss (income)		(134,084)		584,832

(in millions of Korean won)

	Hanwha Aerospace Co., Ltd.			
	2023		2022	
Operating revenue	₩	9,359,006	₩	7,060,393
Profit for the year		976,918		146,554
Other comprehensive loss		(157,661)		(43,152)
Total comprehensive income		819,257		103,402

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3) Summarized consolidated statements of cash flows for each of the two years in the period ended December 31, 2023 are as follows:

(in millions of Korean won)

	Hanwha Life Insurance Co., Ltd.	
	2023	2022
Cash flows from operating activities	₩ 1,737,969	₩ 1,188,538
Cash flows from investing activities	(841,400)	(1,387,469)
Cash flows from financing activities	(125,289)	1,064,458
Net increase in cash and cash equivalents	771,280	865,527
Cash and cash equivalents at the beginning of year	2,902,135	2,044,657
Exchange losses on cash and cash equivalents	(2,497)	(8,049)
Cash and cash equivalents at the end of year	₩ 3,670,918	₩ 2,902,135

(in millions of Korean won)

	Hanwha Solutions Co., Ltd.	
	2023	2022
Cash flows from operating activities	₩ 517,954	₩ 115,717
Cash flows from investing activities	(2,799,148)	(1,476,580)
Cash flows from financing activities	1,608,711	2,322,306
Net decrease (increase) in cash and cash equivalents	(672,483)	961,443
Cash and cash equivalents at the beginning of year	2,616,168	1,651,530
Exchange gains on cash and cash equivalents	14,368	3,195
Cash and cash equivalents at the end of year	₩ 1,958,053	₩ 2,616,168

(in millions of Korean won)

	Hanwha Aerospace Co., Ltd.	
	2023	2022
Cash flows from operating activities	₩ 1,390,220	₩ 1,524,327
Cash flows from investing activities	(3,029,124)	(1,224,903)
Cash flows from financing activities	367,754	216,124
Net decrease (increase) in cash and cash equivalents	(1,271,150)	515,548
Cash and cash equivalents at the beginning of year	3,069,830	2,528,070
Exchange gains on cash and cash equivalents	7,678	26,211
Cash and cash equivalents at the end of year	₩ 1,806,358	₩ 3,069,829

Hanwha Corporation and its subsidiaries

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(3) Major transactions with non-controlling interests

Effects arising from transactions with non-controlling interests on the equity attributable to owners of the parent for each of the two years in the period ended December 31, 2023 are as follows:

<i>(in millions of Korean won)</i>	2023 ¹	2022 ²
Carrying amount of the non-controlling interests decreased	₩ (1,528,066)	₩ 386,665
Cash outflow (inflow)	1,527,342	1,128,914
Excess of consideration paid recognized in parent's equity	₩ 725	₩ (742,249)

¹ Major transactions with non-controlling interests for the year ended December 31, 2023 include the purchase of treasury stock by Hanwha Solutions Co., Ltd., and the redemption of new capital securities by Hanwha Life Insurance Co., Ltd., and Hanwha General Insurance Co., Ltd.

² Major transactions with non-controlling interests for the year ended December 31, 2022 are redemption of hybrid securities of Hanwha Life Insurance Co., Ltd., acquisition of treasury shares of Hanwha Solutions Co., Ltd., issuance of hybrid securities of Hanwha General Insurance Co., Ltd. and disposal of shares of HANWHA ADVANCED MATERIALS CO., LTD.

61. Unconsolidated Structured Entities

(1) The Group is involved in structured entities by investing in SOC, asset securitization, structured finance and investment funds. Details of structured entities' major information are as follows:

Business	Description	Remarks (nature, purpose, activities and others)
Non-financial business	SOC	The private sector investor ('SOC') which is classified as unconsolidated structured entity constructs and transfers the infrastructure for public services such as roads, ports, railroads, schools and environmental infrastructure to the public sector and is paid for the operating and maintaining the infrastructure to return the construction cost in accordance with service concession arrangement. In other words, the private investor sector is a special purpose company (SPC) that is designed to handle the construction and operation of the private investment business, and the investors in this special purpose company recover the investment from operation income. After obtaining construction rights for structured financing, the Group generates investments and profits by construction service provision and equity investment.
Financial business	Asset-backed	Unconsolidated structured entities classified as 'asset securitization' are engaged in issuing asset-backed

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Business	Description	Remarks (nature, purpose, activities and others)
	Securitization	securities based on securitized assets as underlying assets and distributes principals and dividends of the asset-backed securities with sources such as borrowings or proceeds from management, operation and disposition of the securitized asset. The Group transfers risks related to issuance of asset-backed securities with purchase agreements of asset-backed securities or credit offerings. In relation to this, the Group recognizes interest income or commission income. Although an entity that provides funds and arrangements such as assuming conditional liabilities exists prior to the Group's financial support, if the unconsolidated structured entities fail to refinance, the Group could be exposed to the risks of having to purchase the financial assets that had been issued.
	Structured finance	<p>The entity was incorporated as a separate real estate project financing investment entity to efficiently carry out the Company's business. The funds are raised through channels such as equity investments, loans from financial institutions and participating organizations.</p> <p>Project financing investment entity is a way of funding large scale businesses with risks. The project financing investment company invests in qualifying companies not based on credit or physical collateral of the entity leading the project, but the economic feasibilities of the specific project. Investors of the entity benefit from the income arising from the ongoing projects and the Group recognizes interest income, income from valuation of equity investments and dividend income.</p> <p>Although an entity that provides funds, joint guarantees, unsubordinated credit offerings and others exists prior to the Group's financial support, if the funds are not collected by the predetermined schedule or if circumstances such as cessation of a project occurs, the Group could be exposed to principal losses due to decrease in value of equity investments or losses arising from uncollectible loans.</p>
	Investment fund	<p>The entity, an investment trust company, delegates investment and management to fund managers according to the trust agreement and distributes operating profit to the investors.</p> <p>The Group, an investee of the investment trust, recognizes income from valuation of equity investments and dividend income in proportion to its share ratio. If the value of investment trust decreases, the Group will be exposed to the risk of principal losses.</p>
	Investment	The entity, an investment trust association, delegates

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Business	Description	Remarks (nature, purpose, activities and others)
	association	investment and management to managing partner according to the trust agreement and distributes operating profit to the limited liability managing partner.
		The Group, as an investor in investment association, recognizes income (loss) on valuation of equity investments and dividend income in proportion to its share ratio. If the value of investment association decreases, the Group will be exposed to the risk of principal losses.

(2) Details of unstructured entities' size and the Group's risks to unstructured entities as of December 31, 2023 and 2022 are as follows:

(in millions of Korean won)

(in millions of Korean won)

	2023													
	SOC		Asset securitization		Structured finance		Investment funds		Investment association		Others		Total	
Assets in the consolidated statement of financial position														
Cash and cash equivalents	₩	-	₩	-	₩	-	₩	-	₩	-	₩	-	₩	-
Trade and other receivables		19,279		-		-		-		-		-		19,279
Securities		28,095		4,378,423		10,745,251		19,199,440		-		2,077,805		36,429,014
Investments in associates		969		-		1,608,378		150,559		-		411,952		2,171,858
Loans		-		-		-		-		-		-		-
Total	₩	48,343	₩	4,378,423	₩	12,353,629	₩	19,349,999	₩	-	₩	2,489,757	₩	38,620,151
Liabilities in the consolidated statement of financial position		-		-		-		-		-		-		-
Other provisions	₩	-	₩	-	₩	-	₩	-	₩	-	₩	-	₩	-
Total	₩	-	₩	-	₩	-	₩	-	₩	-	₩	-	₩	-
Maximum exposure to loss ¹	₩	453,303	₩	4,434,226	₩	13,455,054	₩	23,512,130	₩	-	₩	4,076,465	₩	45,931,178

¹ Financial assets and financial liabilities are measured based on the book value; financial guarantee contracts, loan commitments and financing arrangements are measured based on the contractual limit amount. In addition, the maximum exposure to loss amount above is the total amount that does not reflect the effect of the Group's hedging activities to reduce the risk of exposure to unconsolidated entities.

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(in millions of Korean won)

(in millions of Korean won)

	2022													
	SOC		Asset securitization		Structured finance		Investment funds		Investment association		Others		Total	
Assets in the consolidated statement of financial position														
Cash and cash equivalents	₩	-	₩	-	₩	-	₩	-	₩	-	₩	-	₩	-
Trade and other receivables		18,552		-		-		-		-		-		18,552
Securities		18,022		3,188,572		552,547		17,352,583		63,775		1,589,753		22,765,252
Investments in associates		969		-		39,051		146,053		22,586		86,040		294,699
Loans		-		1,489,483		7,393,143		1,336,344		-		905,494		11,124,464
Total	₩	37,543	₩	4,678,055	₩	7,984,741	₩	18,834,980	₩	86,361	₩	2,581,287	₩	34,202,967
Liabilities in the consolidated statement of financial position														
Other provisions	₩	-	₩	-	₩	-	₩	-	₩	-	₩	-	₩	-
Total	₩	-	₩	-	₩	-	₩	-	₩	-	₩	-	₩	-
Maximum exposure to loss ¹	₩	432,503	₩	4,592,657	₩	8,483,245	₩	16,760,838	₩	92,762	₩	3,640,381	₩	34,002,386

¹ Financial assets and financial liabilities are measured based on the book value; financial guarantee contracts, loan commitments and financing arrangements are measured based on the contractual limit amount. In addition, the maximum exposure to loss amount above is the total amount that does not reflect the effect of the Group's hedging activities to reduce the risk of exposure to unconsolidated entities.

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62. Business Combination

The Group acquired a 97.6% stake in People Life, engaged in insurance agency activities (effective acquisition date: January 1, 2023), and a 62.6% stake in PT Lippo General Insurance Tbk, engaged in non-life insurance activities (effective acquisition date: March 31, 2023), thereby obtaining control. The Group has provisionally determined the amounts recognized in the financial statements for certain assets and liabilities acquired, as it has not completed the initial accounting treatment for the business combinations. Therefore, the amounts recognized for assets, liabilities, and intangible assets recognized as goodwill in connection with the business combinations may change after the reporting period.

The Group plans to finalize the allocation of the purchase price within the measurement period allowed by KIFRS 1103 *Business Combinations*, based on facts and circumstances existing as of the acquisition date.

(1) Fair values of the consideration transferred, identifiable assets, and liabilities, as well as goodwill, recognized by the Group are as follows:

<i>(in millions of Korean won)</i>	People Life Co., Ltd.	PT Lippo General Insurance Tbk
<i>Transfer price</i>		
<i>Cash and cash equivalents</i>	₩ 251,208	₩ 106,004
<i>Fair value of identifiable net assets</i>	138,405	76,013
<i>Non-controlling interests(*)</i>	3,222	28,439
<i>Goodwill</i>	116,025	58,430

(*) The non-controlling interest was calculated by applying the non-controlling interest percentage to the fair value amount of identifiable net assets as of the acquisition date.

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(2) Details of identifiable assets and liabilities as of the acquisition date are as follows:

<i>(in millions of Korean won)</i>	People Life Co., Ltd.	PT Lippo General Insurance Tbk
<i>Financial Business assets</i>		
Cash and cash equivalents	₩ 22,073	₩ 2,709
Financial assets at fair value through profit or loss	-	57,069
Financial assets at amortized cost	37,182	69,215
Insurance contract assets	-	87,851
Property, plant and equipment	6,660	7,549
Investment property	-	7,024
Intangible assets	100,694	6,086
Right-of-use assets	40,903	244
Current tax assets	-	42
Deferred tax assets	2,325	-
Other assets	82,728	1,087
<i>Financial Business liabilities</i>		
Insurance contract liabilities	-	152,211
Current tax liabilities	1,136	417
Deferred tax liabilities	22,787	5,547
Provision liabilities	5,700	-
Other financial liabilities	55,817	4,565
Other liabilities	68,720	123
<i>Fair value of identifiable net assets</i>	₩ 138,405	₩ 76,013

(3) If the Group had acquired control at the beginning of the reporting period, the consolidated statement of comprehensive income would have recognized the following operating revenue, operating profit, and net profit for the period:

<i>(in millions of Korean won)</i>	People Life Co., Ltd.	PT Lippo General Insurance Tbk
Operating Revenues	₩ 315,742	₩ 284,556
Operating Profits	6,511	17,077
Net profit	4,417	17,388

63. Events after the Reporting Period

On February 26, 2024, the Group issued unsecured bonds through a public offering. Details of the bonds issued by the Group are as follows:

<i>(in millions of Korean won)</i>		Amounts	Interest rate(%)	Issuing date	Maturity date
250-1st	₩	80,000	4.11	2024-02-26	2026-02-26
250-2nd		170,000	4.22	2024-02-26	2027-02-26

Audit opinion on internal control over financial reporting

The accompanying independent auditor's audit report on internal control over financial reporting is attached as a result of auditing the internal control over financial reporting of HANWHA CORPORATION and its subsidiaries (collectively referred to as the "Group") and the consolidated financial statements of the Group for the year ended December 31, 2023 in accordance with the Article 8 of the *Act on External Audit of Stock Companies*.

Attachments:

1. Independent auditor's report on internal control over financial reporting
2. Report on the Effectiveness of Internal Control over Financial Reporting for Consolidation Purposes

Independent auditor's report on internal control over financial reporting
(English Translation of a Report Originally Issued in Korean)

The Shareholders and Board of Directors
HANWHA CORPORATION

Opinion on internal control over financial reporting

We have audited the internal control over financial reporting ("ICFR") of HANWHA CORPORATION and its subsidiaries (collectively referred to as the "Group") based on the Conceptual Framework for Design and Operation of ICFR established by the Operating Committee of ICFR in Korea (the "ICFR Committee") as of December 31, 2023.

In our opinion, the Group's ICFR has been designed and is operating effectively, in all material respects, as of December 31, 2023 in accordance with the Conceptual Framework for Design and Operation of ICFR.

We also have audited, in accordance with the Korean Standards on Auditing ("KSA"), the consolidated statement of financial position as of December 31, 2023, and the consolidated statement of comprehensive income, consolidated statement of changes in equity and consolidated statement of cash flows for the year then ended, and the notes to the consolidated financial statements, including material accounting policy information, of the Group, and our report dated March 19, 2024 expressed an unqualified opinion thereon.

Basis for opinion on ICFR

We conducted our audit in accordance with KSA. Our responsibilities under those standards are further described in the Auditor's responsibilities for the audit of ICFR section of our report.

We are independent of the Group in accordance with the ethical requirements that are relevant to our audit of ICFR 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 audit opinion.

Other matter

The Group's CEO and ICFR officer excluded PT Lippo General Insurance Tbk, a newly affiliated company, from the management evaluation in accordance with Management Guideline for Evaluation and Reporting of ICFR. Accordingly, we also excluded the company from the scope of audit in the same manner as management did.

Responsibilities of management and those charged with governance for ICFR

Management is responsible for designing, implementing, and maintaining an effective ICFR, and for assessing the effectiveness of the ICFR included in the accompanying Report on the Effectiveness of Internal Control over Financial Reporting for Consolidation Purposes.

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

Auditor's responsibilities for the audit of ICFR

Our responsibility is to express an opinion of the Group's ICFR based on our audit. We conducted our audit in accordance with KSA. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective ICFR was maintained in all material respects.

An audit of the ICFR involves performing procedures to obtain audit evidence as to whether a material weakness exists. The procedures selected depend on the auditor's judgment, including the assessment of the risks that a material weakness exists. An audit also includes testing and evaluating the design and operation of ICFR based on obtaining an understanding of ICFR and the assessed risk.

ICFR definition and inherent limitations

The ICFR of a company and its subsidiaries is implemented by those charged with governance, management, and other employees and is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with International Financial Reporting Standards as adopted by the Republic of Korea ("KIFRS"). The ICFR of the company and its subsidiaries includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company and its subsidiaries; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of consolidated financial statements in accordance with KIFRS, and that receipts and expenditures of the company and its subsidiaries are being made only in accordance with authorizations of management and directors of the company and its subsidiaries; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the assets of the company and its subsidiaries that could have a material effect on the consolidated financial statements.

Because of its inherent limitations, ICFR may not prevent, or detect misstatements of the consolidated financial statements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that ICFR may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

The engagement partner on the audit resulting in this independent auditor's report is Seok Young Lee



March 19, 2024

This audit report is effective as of March 19, 2024, the independent auditor's report date. Accordingly, certain material subsequent events or circumstances may have occurred during the period from the date of the independent auditor's report to the time this report is used. Such events and circumstances could significantly affect the Company's ICFR and may result in modifications to this report.

Report on the Effectiveness of Internal Control over Financial Reporting for Consolidation Purposes

(English Translation of a Report Originally Issued in Korean)

To the Shareholders, Board of Directors and Audit Committee of
Hanwha Corporation

We, as the Chief Executive Officer ("CEO") and the Internal Control over Financial Reporting Officer of Hanwha Corporation Co., Ltd. (the "Company"), assessed the effectiveness of the design and operation of the Company's Internal Control over Financial Reporting for Consolidation Purposes("ICFR for Consolidation") for the year ended December 31, 2023.

The Company's management, including ourselves, is responsible for designing and operating ICFR for Consolidation. We assessed the design and operating effectiveness of ICFR for Consolidation in the prevention and detection of an error or fraud which may cause material misstatements in the preparation and disclosure of reliable financial statements. We designed and operated ICFR for Consolidation in accordance with *Conceptual Framework for Designing and Operating Internal Control over Financial Reporting* established by the Operating Committee of Internal Control over Financial Reporting in Korea (the ICFR Committee). And, we conducted an evaluation of ICFR for Consolidation based on *Best Practice Guideline for Evaluating and Reporting Effectiveness of Internal Control over Financial Reporting* established by the ICFR Committee.

Based on the assessment results, we believe that the Company's ICFR for Consolidation, as at December 31, 2023, is designed and operating effectively, in all material respects, in accordance with *Conceptual Framework for Designing and Operating Internal Control over Financial Reporting*.

Due to practical difficulties, the Company excluded the newly consolidated PT Lippo General Insurance TBK from the ICFR for consolidation assessment. The base date of the consolidation is March 29, 2023, and as at December 31, 2023, total assets and sales amount to KRW 203.414 billion and KRW 234.477 billion, taking up 0.10% and 0.44% of total assets and sales of the Company after the consolidation.

We certify that this report does not contain any untrue statement of a fact, or omit to state a fact necessary to be presented herein. We also certify that this report does not contain or present any statement which cause material misunderstandings, and we have reviewed and verified this report with sufficient due care.

We will continue to strive for effective ICFR for Consolidation operation.

February 14, 2024

김승모(KIM, SEUNG MO),
Chief Executive Officer



임진규(LIM, JIN GYU),
Internal Control over Financial Reporting Officer

