

DOOSAN ENERBILITY CO., LTD.

Separate Financial Statements

December 31, 2023 and 2022

(With Independent Auditors' Report Thereon)

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Independent Auditors' Report

Based on a report originally issued in Korean

To the Shareholders and Board of Directors of
Doosan Enerbility Co., Ltd. :

Opinion

We have audited the separate financial statements of Doosan Enerbility Co., Ltd. ("the Company"), which comprise the separate statements of financial position as of December 31, 2023 and 2022, the separate statements of loss and comprehensive loss, changes in equity and cash flows for the years then ended, and notes, comprising material accounting policy information and other explanatory information.

In our opinion, the accompanying separate financial statements present fairly, in all material respects, the separate financial position of the Company as of December 31, 2023 and 2022, and its separate financial performance and its separate cash flows for the years then ended in accordance with Korean International Financial Reporting Standards ("K-IFRS").

We also have audited, in accordance with Korean Standards on Auditing ("KSAs"), the Company's Internal Control over Financial Reporting ("ICFR") as of December 31, 2023 based on the criteria established in Conceptual Framework for Designing and Operating ICFR issued by the Operating Committee of ICFR in the Republic of Korea, and our report dated March 15, 2024 expressed an unmodified opinion on the effectiveness of the Company's ICFR.

Basis for Opinion

We conducted our audits in accordance with KSAs. Our responsibilities under those standards are further described in the *Auditors' Responsibilities for the Audit of the Separate Financial Statements* section of our report. We are independent of the Company in accordance with the ethical requirements that are relevant to our audit of the separate financial statements in Republic of Korea, and we have fulfilled our ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Key Audit Matters

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

1) Uncertainty in estimated total contract cost

As described in the note 3 to the separate financial statements, the Company estimates percentage-of completion of performance obligation satisfied over time by using the input method and recognizes revenue over time accordingly.

The determination of the percentage-of-completion is influenced by the estimated total contract cost and the adequacy of the cumulative input cost. The total contract cost estimate is based on management's accounting estimates and judgements, so uncertainty exists. Therefore, as there is a risk of overstatement of revenue due to an error in judgment or intent, we have identified the uncertainty in estimated total contract cost as a key audit matter.

The following audit procedures were performed regarding uncertainty in estimated total contract cost

- Evaluation and testing of internal controls related to the determination and modification of estimated total contract cost.
- For major projects completed during the current year, performed retrospective review by comparing the actual cost incurred during the current year with the estimated cost at the end of the prior year.
- Inquiries and inspection of documents for projects with significant changes in estimated total contract cost.
- Inquiries and analytical review of changes in the percentage-of-completion for each reporting period
- For major projects, inquiries and inspection of documents if there were significant differences between the progress rate in the respective monthly progress reports received from customers and the percentage-of-completion calculated based on input cost.
- Performed site visits for on-going construction sites and sites which have equipment under construction.
- Comparison between estimated total contract cost used in revenue recognition and that maintained by respective site department for major projects.

2) Impairment of investment in subsidiaries.

As described in the note 2 to the separate financial statements, the Company assesses whether there are any indicators of impairment for investment in subsidiaries and conducts an impairment test for such investments with impairment indicators. The Company compares the carrying amount of investment in subsidiaries with the recoverable amount which is measured as the value in use using discounted cash flow projection to determine whether the investment is impaired.

In calculating the value in use, significant judgments by management and uncertainties are involved in forecasting future cash flows and estimating key assumptions (growth rate, discount rate, etc.). Therefore, we identified the impairment of investment in subsidiaries as a key audit matter.

The following audit procedures were performed regarding impairment of investment in subsidiaries.

- Evaluation and testing of internal controls related to impairment test for investment in subsidiaries.
- Evaluation of the competence and objectivity of management experts involved in value in use estimation.
- Inquiries and assessment of the valuation model applied by the Company.
- Verifying the mathematical accuracy of the valuation model applied to the estimation of the value in use of the investment in subsidiaries.
- Understanding of the future cash flows and agreeing whether the estimated future cash flow agrees to business plan approved by the Company's management.
- Testing the appropriateness of major assumptions (discount rate, growth rate, etc.) applied in the valuation model by comparing to benchmark of peer industry and historical financial information of the investee.
- Evaluation of the sensitivity analysis results for the discount rate and permanent growth rate presented by the Company to assess the impact of changes in major assumptions on the impairment assessment.

**Other Matter**

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

Responsibilities of Management and Those Charged with Governance for the Separate Financial Statements

Management is responsible for the preparation and fair presentation of the separate financial statements in accordance with K-IFRS, and for such internal control as management determines is necessary to enable the preparation of separate financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the separate financial statements, management is responsible for assessing the Company'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 Company or to cease operations, or has no realistic alternative but to do so.

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

Auditors' Responsibilities for the Audit of the Separate Financial Statements

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

As part of an audit in accordance with KSAs, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the separate 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 Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, then we are required to draw attention in our auditors' report to the related disclosures in the separate financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditors' report. However, future events or conditions may cause the Company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the separate financial statements, including the disclosures, and whether the separate financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

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 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 separate financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditors' 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 auditors' report is Jeong Gu Kang.

KPMG Samjory Accounting Corp.

Seoul, Korea

March 15, 2024

This report is effective as of March 15, 2024, the audit report date. Certain subsequent events or circumstances, which may occur between the audit report date and the time of reading this report, could have a material impact on the accompanying separate financial statements and notes thereto. Accordingly, the readers of the audit report should understand that the above audit report has not been updated to reflect the impact of such subsequent events or circumstances, if any.

DOOSAN ENERBILITY CO., LTD.
Separate Statements of Financial Position
As of December 31, 2023 and 2022

(In won)	Note	2023	2022
Assets			
Cash and cash equivalents	4,10	₩ 733,013,687,734	307,351,155,785
Short-term financial instruments	4,5,10,32	72,594,865,414	84,578,982,219
Trade receivables, net	4,7,10,24,33	606,737,356,604	516,229,885,729
Other receivables, net	4,7,10,33	371,873,451,018	240,877,533,160
Due from customers for contract work, net	7,24,33	1,259,649,768,323	970,226,754,294
Prepayments, net	24	429,084,440,023	501,387,142,119
Prepaid expenses		51,669,932,426	55,907,148,754
Short-term loans, net	4,7,10,33	94,473,049,832	377,110,993,460
Derivative financial assets	4,9,10	17,952,198,350	61,948,119,608
Firm commitment assets	9	37,393,785,368	54,927,582,112
Inventories, net	8,24	290,947,636,782	326,311,364,073
Other current assets, net	4,7,10,14	52,784,315,176	38,785,760,289
Assets held for sale	11,12,31,33,35	33,587,414,022	1,967,248,725
Total current assets		4,051,761,901,072	3,537,609,670,327
Long-term financial instruments	4,5,10	25,607,641,588	25,250,349,839
Long-term investment in securities	4,6,10,32	150,475,291,288	184,067,898,255
Long-term other receivables, net	4,7,10	10,916,000,139	48,236,000,139
Investments in subsidiaries, associates and joint ventures	11,32,33,35	4,302,259,356,876	4,499,041,752,505
Long-term loans, net	4,7,10,33	268,159,191,427	39,434,963,537
Property, plant and equipment, net	12,14,32,35	3,151,464,889,135	3,152,146,629,853
Intangible assets, net	13	1,113,633,689,807	1,002,660,776,966
Investment properties, net	14,15,33	93,373,199,984	159,698,021,422
Derivative financial assets	4,9,10	16,370,487,817	15,693,757,806
Firm commitment assets	9	25,848,796,296	40,539,228,724
Deferred tax assets	29	427,399,450,238	345,731,247,422
Guarantee deposits, net	4,7,10, 24	47,239,098,283	36,690,654,806
Due from customers for contract work, net	24	-	102,739,503,644
Total non-current assets		9,632,747,092,878	9,651,930,784,918
Total assets		₩ 13,684,508,993,950	13,189,540,455,245

See accompanying notes to the separate financial statements.

DOOSAN ENERBILITY CO., LTD.

Separate Statements of Financial Position, Continued

As of December 31, 2023 and 2022

(In won)	Note	2023	2022
Liabilities			
Trade payables	4,10,33 ₩	1,319,418,619,107	1,213,543,335,420
Short-term borrowings	4,10,16,31,32,34	967,833,838,756	1,249,782,165,306
Other payables	4,10	185,489,164,365	45,952,658,693
Advance received	24	24,462,434,254	24,949,333,090
Due to customers for contract work	24,33	1,916,938,866,419	1,461,400,379,627
Withholdings		85,118,789,774	3,759,245,449
Accrued expenses	4,10	199,478,672,502	119,373,896,230
Current tax assets		1,090,371,724	-
Current portion of long-term debt	4,10,16,31,32,33,34	1,403,847,400,098	641,666,907,881
Current lease liabilities	4,10,14,33,34	26,198,911,078	29,843,904,543
Derivative financial liabilities	9,10	52,590,212,262	70,113,997,145
Firm commitment liabilities	9	11,661,258,589	16,535,690,334
Provisions	18,24	122,643,671,895	182,202,922,197
Other current liabilities	4,10	1,120,370,441	180,494,828
Total current liabilities		6,317,892,581,264	5,059,304,930,743
Bonds	4,10,16,31,32,34	423,103,270,206	259,132,247,745
Long-term borrowings	4,10,16,31,32,33,34	287,188,571,435	1,113,279,503,721
Long-term other payables	4,10	10,016,333,894	9,509,897,301
Defined benefit liabilities, net	17	192,863,552,558	113,117,096,887
Deposits received	4,10	185,303,683,258	180,922,160,982
Non-current lease liabilities	4,10,14,33,34	129,212,878,345	142,460,437,485
Derivative financial liabilities	9,10	36,634,855,784	39,201,565,557
Firm commitment liabilities	9	13,447,734,190	6,307,158,879
Provisions	18	121,081,952,162	111,506,249,955
Other non-current liabilities	4,10	43,014,779,823	41,167,301,365
Total non-current liabilities		1,441,867,611,655	2,016,603,619,877
Total liabilities		7,759,760,192,919	7,075,908,550,620
Equity			
Capital stock	19	3,267,326,780,000	3,256,061,215,000
Capital surplus	16,19,20	1,675,105,715,369	2,812,160,288,451
Other components of equity	19,21	(1,960,987,636)	(1,748,655,298)
Accumulated other comprehensive income	6,9,10,12,17,22	1,007,940,600,624	1,071,927,836,136
Accumulated deficits	23	(23,663,307,326)	(1,024,768,779,664)
Total equity		5,924,748,801,031	6,113,631,904,625
Total liabilities and equity	₩	13,684,508,993,950	13,189,540,455,245

See accompanying notes to the separate financial statements.

DOOSAN ENERBILITY CO., LTD.

Separate Statements of Loss

For the years ended December 31, 2023 and 2022

<i>(In won)</i>	Note		2023	2022
Sales	24,33	₩	6,651,862,458,000	5,284,439,413,737
Cost of sales	24,25,33		5,802,616,629,634	4,781,158,343,088
Gross profit			849,245,828,366	503,281,070,649
Selling and administrative expenses	10,25,26,33		394,387,553,262	417,975,683,399
Operating profit			454,858,275,104	85,305,387,250
Finance income and expenses			(137,206,832,079)	(231,909,938,687)
Finance income	10,27,33		458,325,164,978	572,795,906,994
Finance expenses	10,27,33		595,531,997,057	804,705,845,681
Other non-operating income and expenses			(552,349,649,171)	(1,173,885,896,331)
Other non-operating income	10,28,33		70,238,903,268	114,550,666,595
Other non-operating expenses	10,28,33		622,588,552,439	1,288,436,562,926
Loss before income tax			(234,698,206,146)	(1,320,490,447,768)
Income tax benefit	29		(130,518,894,735)	(108,647,073,055)
Loss for the year		₩	(104,179,311,411)	(1,211,843,374,713)
Loss per share				
Basic loss per share	30	₩	(163)	(1,960)
Diluted loss per share	30		(163)	(1,960)

See accompanying notes to the separate financial statements.

DOOSAN ENERBILITY CO., LTD.

Separate Statements of Comprehensive Loss

For the years ended December 31, 2023 and 2022

<i>(In won)</i>	Note	2023	2022
Loss for the year		₩ (104,179,311,411)	(1,211,843,374,713)
Other comprehensive income		(109,244,261,054)	43,253,100,554
Items that will not be reclassified subsequently to profit or loss		(99,258,588,999)	41,679,771,764
Remeasurements of defined benefit liabilities	17,29	(46,396,996,503)	25,697,821,618
Loss on valuation of fair value through other comprehensive income ("FVOCI") financial assets	6,29	(510,817,568)	(120,500,439)
Profit (loss) on revaluation of assets	12,29	(52,350,774,928)	16,102,450,585
Items that are or may be reclassified subsequently to profit or loss		(9,985,672,055)	1,573,328,790
Effective portion of changes in fair value of cash flow hedges	9,10,29	(9,985,672,055)	1,573,328,790
Total comprehensive loss for the year		₩ (213,423,572,465)	(1,168,590,274,159)

See accompanying notes to the separate financial statements.

DOOSAN ENERBILITY CO., LTD.

Separate Statements of Changes in Equity
For the years ended December 31, 2023 and 2022

(In won)

		Capital stock	Capital surplus	Other components of equity	Accumulated other comprehensive income	Retained earnings (Accumulated deficit)	Total equity
Balance at January 1, 2022	₩	2,675,624,980,000	1,811,241,858,539	(1,031,834,273)	1,054,965,430,146	160,783,900,485	5,701,584,334,897
Total comprehensive income (loss):							
Loss for the year		-	-	-	-	(1,211,843,374,713)	(1,211,843,374,713)
Effective portion of changes in fair value of cash flow hedges		-	-	-	1,573,328,790	-	1,573,328,790
Remeasurements of defined benefit liabilities		-	-	-	-	25,697,821,618	25,697,821,618
Loss on change in fair value of FVOCI financial assets		-	-	-	(120,500,439)	-	(120,500,439)
Profit on revaluation of assets		-	-	-	15,509,577,639	592,872,946	16,102,450,585
Subtotal		-	-	-	16,962,405,990	(1,185,552,680,149)	(1,168,590,274,159)
Transactions with owners of the Company:							
Issuance of ordinary shares		414,364,500,000	722,579,110,040	-	-	-	1,136,943,610,040
Exercise of stock warrants		166,071,735,000	277,622,498,847	-	-	-	443,694,233,847
Stock option		-	716,821,025	(716,821,025)	-	-	-
Subtotal		580,436,235,000	1,000,918,429,912	(716,821,025)	-	-	1,580,637,843,887
Balance at December 31, 2022	₩	3,256,061,215,000	2,812,160,288,451	(1,748,655,298)	1,071,927,836,136	(1,024,768,779,664)	6,113,631,904,625
Balance at January 1, 2023	₩	3,256,061,215,000	2,812,160,288,451	(1,748,655,298)	1,071,927,836,136	(1,024,768,779,664)	6,113,631,904,625
Total comprehensive income (loss):							
Loss for the year		-	-	-	-	(104,179,311,411)	(104,179,311,411)
Effective portion of changes in fair value of cash flow hedges		-	-	-	(9,985,672,055)	-	(9,985,672,055)
Remeasurements of defined benefit liabilities		-	-	-	-	(46,396,996,503)	(46,396,996,503)
Loss on change in fair value of FVOCI financial assets		-	-	-	(510,817,568)	-	(510,817,568)
Profit (Loss) on revaluation of assets		-	-	-	(53,490,745,889)	1,139,970,961	(52,350,774,928)
Subtotal		-	-	-	(63,987,235,512)	(149,436,336,953)	(213,423,572,465)
Conversion of the convertible bonds		11,265,565,000	13,274,903,871	-	-	-	24,540,468,871
Stock option		-	212,332,338	(212,332,338)	-	-	-
Disposition of deficit		-	(1,150,541,809,291)	-	-	1,150,541,809,291	-
Subtotal		11,265,565,000	(1,137,054,573,082)	(212,332,338)	-	1,150,541,809,291	24,540,468,871
Balance at December 31, 2023	₩	3,267,326,780,000	1,675,105,715,369	(1,960,987,636)	1,007,940,600,624	(23,663,307,326)	5,924,748,801,031

See accompanying notes to the separate financial statements.

DOOSAN ENERBILITY CO., LTD.

Separate Statements of Cash Flows

For the years ended December 31, 2023 and 2022

(In won)	Note	2023	2022
Cash flows from operating activities			
Cash generated from operations:	34 ₩	843,460,716,981	337,711,243,278
Loss for the period		(104,179,311,411)	(1,211,843,374,713)
Adjustments		445,351,384,616	1,508,399,763,576
Changes in operating assets and liabilities		502,288,643,776	41,154,854,415
Interest received		8,594,450,897	6,876,285,390
Interest paid		(191,557,985,788)	(144,784,834,508)
Dividends received		210,145,332,529	114,363,102,972
Income tax paid		(4,664,524,448)	(42,422,197,715)
Net cash provided by operating activities		865,977,990,171	271,743,599,417
Cash flows from investing activities			
Cash inflows from investing activities:			
Decrease in short-term financial instruments		144,342,642,317	659,753,310,980
Collection of short-term loans		58,026,623,008	65,294,100,000
Decrease in long-term financial instruments		1,052,649	1,736,398,866
Proceeds from disposal of long-term investments in securities		1,690,480,650	17,988,145,450
Collection of long-term loans		1,841,938,738	4,824,060,000
Proceeds from disposal of investments in subsidiaries, associates and joint ventures		279,620,000,053	96,726,925,623
Proceeds from disposal of property, plant and equipment		3,957,926,603	3,880,263,789
Proceeds from disposal of intangible assets		1,786,363,636	350,000,000
Proceeds from disposal of investment assets		-	15,400,000,000
Decrease in lease receivables		2,345,454,987	2,455,823,349
Decrease in assets held-for-sale		2,084,715,769	28,199,454,885
Subtotal		495,697,198,410	896,608,482,942
Cash outflows for investing activities:			
Increase in short-term financial instruments		(132,062,299,914)	(298,743,248,853)
Increase in short-term loans		(146,211,763,747)	(309,501,401,622)
Increase in long-term financial instruments		(6,247,208)	(4,248,359,168)
Acquisition of long-term investment in securities		(7,707,981,639)	(9,632,616,850)
Increase in long-term loans		(164,572,184,000)	(113,280,240,037)
Acquisition of investments in subsidiaries, associates and joint ventures		(79,395,620,000)	(276,667,792,762)
Acquisition of property, plant and equipment		(93,241,939,563)	(54,654,666,255)
Acquisition of intangible assets		(97,922,748,712)	(118,350,607,140)
Decrease in derivative financial liabilities		(6,157,154,646)	(142,140,077,479)
Subtotal		(727,277,939,429)	(1,327,219,010,166)
Net cash used in investing activities		(231,580,741,019)	(430,610,527,224)

See accompanying notes to the separate financial statements.

DOOSAN ENERBILITY CO., LTD.

Separate Statements of Cash Flows, Continued

For the years ended December 31, 2023 and 2022

<i>(In won)</i>	Note	2023	2022
Cash flows from financing activities			
Cash inflows from financing activities:			
Proceeds from long-term borrowings	₩	506,858,000,000	1,144,345,000,000
Issuance of bonds		429,527,001,250	270,000,000,000
Issuance of ordinary shares		-	1,147,789,665,000
Exercise of stock warrants		-	443,883,380,246
Subtotal		936,385,001,250	3,006,018,045,246
Cash outflows for financing activities:			
Decrease in short-term borrowings, net		(282,278,074,378)	(2,024,348,311,562)
Repayment of long-term borrowings		(180,514,285,710)	-
Repayment of current portion of long-term debt		(658,427,642,855)	(868,242,655,936)
Payment of lease liabilities		(27,369,317,359)	(19,779,206,787)
Repayment of asset-backed borrowings		-	(49,600,000,000)
Expense of ordinary shares issuance		(59,778,325)	(11,671,319,540)
Subtotal		(1,148,649,098,627)	(2,973,641,493,825)
Net cash provided by (used in) financing activities		(212,264,097,377)	32,376,551,421
Effect of movements in exchange rates on cash held		3,529,380,174	10,146,325,931
Net increase (decrease) in cash and cash equivalents		425,662,531,949	(116,344,050,455)
Cash and cash equivalents at January 1		307,351,155,785	423,695,206,240
Cash and cash equivalents at December 31	₩	733,013,687,734	307,351,155,785

See accompanying notes to the separate financial statements.

DOOSAN ENERBILITY CO., LTD.
Notes to the Separate Financial Statements
For the years ended December 31, 2023 and 2022

1. Reporting entity

Doosan Enerbility Co., Ltd. (the “Company”) was incorporated on September 20, 1962, with its headquarters in Changwon, Korea. The Company is engaged in the manufacturing of various power generation equipment such as boilers, turbines and generators. Additionally, it engages in engineering, procurement and construction of thermal power plants as well as general construction activities, seawater desalination and other related areas.

The Company was listed on the Korea Exchange on October 25, 2000 and its major stockholder as of December 31, 2023 is Doosan Corp (holding 30.40% equity ownership).

2. Material accounting policies and basis of preparation

(1) Basis of separate financial statements

These financial statements are separate financial statements prepared in accordance with K-IFRS No. 1027, ‘Separate Financial Statements’ presented by a parent, an investor in an associate or a venturer in a joint venture, in which the investments are accounted for on the basis of the direct equity interest rather than on the basis of the reported results and net assets of the investees.

The principal accounting policies are set out below. Except for the effect of the amendments to K-IFRS and new interpretations set out below, the principal accounting policies used to prepare the separate financial statements as of and for the year ended December 31, 2023 are consistent with the accounting policies used to prepare the separate financial statements as of and for the year ended December 31, 2022.

The accompanying separate financial statements have been prepared on the historical cost basis except for certain non-current assets and financial instruments that are measured at fair values, as explained in the accounting policies below. Historical cost is based on the fair values of the consideration given in exchange for assets

1) Changes in accounting standards effective from January 1, 2023 are as follows:

- *Amendments to K-IFRS No. 1117 ‘Insurance Contracts’* : the amendments clarify standards for recognition and measurement, presentation and disclosure for insurance contracts.

- *Amendments to K-IFRS No. 1008 ‘Accounting Policies, Changes in Accounting Estimates and Errors’* : the amendments clarify the definition of accounting estimates.

- *Amendments to K-IFRS No. 1001 ‘Presentation of Financial Statements’* : the amendments require the Company to disclose ‘material’ accounting policies instead of ‘significant’ accounting policies, and add guidance on how the Company applies the concept of materiality in making decisions about accounting policy disclosures.

- *Amendments to K-IFRS No. 1001 ‘Presentation of Financial Statements’* : the amendments provide guidance for disclosure of valuation gains and losses on financial liabilities subject to exercise price adjustment conditions.

- *Amendments to K-IFRS No. 1012 ‘Income Taxes’* – the amendments provide guidance for recognition of deferred tax related to assets and liabilities arising from a single transaction.

- *Amendments to K-IFRS No. 1012 ‘Income Taxes’* : The amendments provide a mandatory temporary exception to the recognition and disclosure of deferred taxes arising from the jurisdictional implementation of the Pillar Two Model Rules

The Company believes that these amendments have no significant impact on the Company’s separate financial statements.

2. Material accounting policies and basis of preparation, Continued

2) New and revised K-IFRSs in issue, but not yet effective

- *Amendments to K-IFRS No. 1001 'Presentation of Financial Statements'* – the amendments clarify guidance for classification of liabilities as current or non-current and future loan agreement.
- *Amendments to K-IFRS No. 1007 'Statement of Cash Flows' and K-IFRS No. 1107 'Financial Instruments: Disclosures'* – the amendments require the Company to disclose of supplier finance arrangements.
- *Amendments to K-IFRS No. 1116 'Lease'* – the amendments clarify accounting guidance for lease liability in a sale and leaseback.
- *Amendments to K-IFRS No. 1001 'Presentation of Financial Statements'* – the amendments clarify guidance for disclosure of virtual assets.

The Company anticipates that the application of the enactment and amendments will not have a significant impact on the Company's separate financial statements.

(2) Investments in subsidiaries, associates and joint ventures

The Company has elected to use book value as deemed cost for subsidiaries, joint ventures and associates at the date of transition to K-IFRS. After the date of transition, subsidiaries, joint ventures and associates are measured at cost. Dividend income from investments in subsidiaries, joint ventures and associates is recognized in profit or loss in the period when the shareholders' right to receive payment has been established.

(3) Foreign currency translation

Foreign currency gain (loss) from settlements of foreign currency transactions or translation of monetary items denominated in foreign currencies are recognized in profit or loss whereas the gain (loss) from qualified cash flow hedge and net investment hedge for foreign operations is deferred as an equity item.

(4) Cash and cash equivalents

Cash and cash equivalents include cash on hand, demand deposits, short-term, highly liquid investments with maturities (or date of redemption) of three months or less upon acquisition.

(5) Non-derivative financial assets

1) Initial recognition and measurement

Trade and other receivables, and debt investment are initially recognized when they are originated. Other financial assets and financial liabilities are recognized when the Company becomes a party to the contractual provisions of the instruments.

2. Material accounting policies and basis of preparation, Continued

2) Classification and subsequent measurement

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

- the stated policies and objectives for the portfolio and the operation of those policies in practice;
- how the performance of the business model and the financial assets held within that business model are evaluated and reported to the entity's key management personnel;
- the risks that affect the performance of the business model (and the financial assets held within that business model) and, in particular, the way in which those risks are managed;
- how managers of the business are compensated (e.g., whether the compensation is based on the fair value of the assets managed or on the contractual cash flows collected); and
- the frequency, volume and timing of sales of financial assets in prior periods, the reason for those sales and expectation about future sales activity for financial asset.

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

Portfolio of financial assets that meet the definition of trading or which performance is evaluated on a fair value basis is measured at FVTPL.

In assessing whether the contractual cash flows are solely payments of principal and interest, the Company considers the contractual terms of the instrument. This includes assessing whether the financial asset contains a contractual term that could change the timing or amount of contractual cash flows such that it would not meet this condition. In making this assessment, the Company considers:

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

3) Offsetting between financial assets and financial liabilities

Financial assets and financial liabilities are offset and the net amount is presented in the separate statement of financial position only when the Company currently has a legally enforceable right to offset the recognized amounts, and there is the intention to settle on a net basis or to realize the asset and settle the liability simultaneously.

2. Material accounting policies and basis of preparation, Continued

(6) Impairment of financial assets

1) Recognition of impairment on financial assets

The Company recognizes loss allowances for expected credit losses ("ECLs") on:

- financial assets measured at amortized costs;
- debt securities measured at FVOCI; and
- contract assets defined by K-IFRS No. 1115

The Company's impairment losses are likely to be recognized a lifetime ECLs based on the extent of increase in credit risk since inception except for below asset to be recognized loss allowances measured on 12-month.

- credit risk of debt instruments is low at the end of reporting date
- credit risk has not increased significantly since the initial recognition of debt investment (lifetime ECLs: ECL that resulted from all possible default events over the expected life of a financial instrument)

The Company adopted an accounting policy to recognize loss allowances at an amount equal to lifetime ECLs for trade receivables and contract assets.

2) Credit-impaired financial instrument

A debt instrument carried at amortized cost and FVOCI is assessed at the end of each reporting period to determine whether there is objective evidence that it is impaired. A financial asset is impaired if objective evidence indicates that the loss event had a negative effect on the estimated future cash flows of that asset that can be estimated reliably.

Objective evidence that a financial asset is impaired includes:

- significant financial difficulty of the issuer or borrower;
- a breach of contract, such as default or delinquency in interest or principal payments;
- the lender, for economic or legal reasons relating to the borrower's financial difficulty, granting to the borrower a concession that the lender would not otherwise consider;
- it becoming probable that the borrower will enter bankruptcy or other financial reorganization; or
- the disappearance of an active market for that financial asset because of financial difficulties.

3) Presentation of credit loss allowance on financial position

For loss allowance on financial assets measured at amortized cost is deducted from the carrying amount of the respective assets, while loss allowance on debt instruments at FVOCI is recognized in OCI.

4) De-recognition

The Company derecognizes a financial asset when it has no reasonable expectations of recovering the contractual cash flows on a financial asset in its entirety or a portion thereof. The Company assess whether there are reasonable expectations of recovering the contractual cash flows from customers and individually assess the timing and amount of write-off. The Company does not expect that such write-off will be recovered but they may be subject to collection activity according to the Company past due collection process.

2. Material accounting policies and basis of preparation, Continued

(7) Trade receivables

Trade receivables are amounts owed by customer for products and services provided in the ordinary course of business. Trade receivables expected to be collected within one year are classified as current assets. Otherwise they are classified as non-current assets. Trade receivables are initially measured at fair value except that they do not contain a significant financing component in accordance with K-IFRS No. 1115 'Revenue from contracts with customers' and are presented as net of allowance for doubtful accounts, estimated on an individual basis based on past bad debt experience.

(8) Inventories

Inventories are stated at the lower of cost and net realizable value. Cost of inventories includes fixed and variable manufacturing overhead costs which are systematically allocated to inventories by appropriate methods based on each category of inventory. The cost of inventories is determined by the specific identification method for finished goods, work-in-process and materials in transit, and moving average method for all other inventories.

The Company periodically reviews changes in net realizable value of inventories (current replacement cost for raw materials) due to damage, obsolescence, decline in selling prices and others and recognizes loss on inventory valuation. Loss on inventory valuation is charged to cost of sales when it is ordinary and to other non-operating expense when it is extraordinary. When the circumstances that previously caused inventories to be written down below cost no longer exist and the new market value of inventories subsequently recovers, the valuation loss is reversed to the extent of the original valuation loss and the reversal is deducted from cost of sales.

2. Material accounting policies and basis of preparation, Continued**(9) Property, plant and equipment**

After initial recognition, the land is stated as fair value at revaluation date less accumulated impairment loss. The revaluation is performed periodically to ensure that carrying value of the asset does not differ materially from its fair value at the end of reporting period. When parts of an item of property, plant and equipment have different useful lives, they are accounted for as separate items (major components) of property, plant and equipment. The cost of an item of property, plant and equipment includes expenditure that is directly attributable to the acquisition of the asset including the initial estimate of the costs of dismantling and removing the item and restoring the site on which it is located.

Subsequent costs are capitalized only if it is highly probable that future economic benefits associated with the assets will flow into the Company. Depreciation of property, plant and equipment is calculated to the cost of each asset less residual value using the straight-line method over the estimated useful lives of the assets as follows:

	Useful lives
Buildings	10~40 years
Structures	10~40 years
Machinery	3~20 years
Others	3~15 years

When there is indicator for impairment, and the carrying amount of property, plant and equipment is higher than the recoverable amount, the carrying amount is adjusted to the recoverable amount and the difference is recognized as an impairment loss. Meanwhile, when the recoverable amount subsequently exceeds the carrying amount of the impaired asset, the excess is recorded as a reversal of impairment loss to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation, if no impairment loss had been recognized. Upon derecognition of a property, plant and equipment, the difference between the net disposal proceeds and carrying amount of the item is recognized in other non-operating income (expense).

A revaluation surplus is recorded in OCI and credited to the asset revaluation reserve in equity. However, to the extent that it reverses a revaluation deficit of the same asset previously recognized in profit or loss, the increase is recognized in profit and loss. A revaluation deficit is recognized in the statement of profit or loss, except to the extent that it offsets an existing surplus on the same asset recognized in the asset revaluation reserve.

2. Material accounting policies and basis of preparation, Continued**(10) Investment Property**

Investment properties are properties held to earn rentals and/or for capital appreciation. Investment properties are measured initially at cost, including transaction costs. Subsequent to initial recognition, the book value of investment property is presented at the cost less accumulated depreciation and accumulated impairment.

While land is not depreciated, building excluding investment property transferred from lease assets is depreciated using the straight-line method over the useful lives between 10 and 40 years.

(11) Intangible assets

Intangible assets are initially measured at cost and are carried at cost less accumulated amortization and accumulated impairment losses. Subsequent expenditure on an intangible asset is capitalized only when it is probable that the expected future economic benefits that are attributable to the asset will increase.

Intangible assets other than goodwill and intangibles with indefinite useful lives are amortized on a straight-line basis over their estimated useful lives from the date that they are available for use. The estimated useful lives of the intangible assets are as follows:

	Useful lives
Industrial property rights	5~10 years
Development costs	5~20 years
Others	1~20 years

Expenditures relating to development activities are capitalized when the result of the development is for the development of new products or substantial improvement of functions of existing products; there is technical and commercial feasibility of completing the development; and the Company has the ability to measure reliably the expenditure attributable to the development. Capitalized development costs include expenditure on materials, salaries, wages and other employment-related costs of personnel directly engaged in generating assets and related overhead cost which is systematically allocated. Capitalized development costs are presented at the acquisition cost less accumulated amortization and accumulated impairment losses. Capitalized development costs are amortized using the straight-line method over the estimated useful life and amortization expenses are included in cost of goods manufactured and amortization in selling and administrative expenses. The expenditure on research and development which does not meet conditions noted above is recognized as an expense when it is incurred.

However, useful lives of other intangible assets, which are determined to be indefinite since there is no foreseeable limit to the period over which the assets are expected to generate net cash inflows for the Company, are not amortized but tested for impairment once a year.

2. Material accounting policies and basis of preparation, Continued

(12) Non-derivative financial liabilities

The Company classifies non-derivative financial liabilities into financial liabilities at FVTPL or other financial liabilities in accordance with the substance of the contractual arrangement and the definitions of financial liabilities. The Company recognizes financial liabilities in the separate statement of financial position when the Company becomes a party to the contractual provisions of the financial liability.

(13) Financial guarantee contracts

The Company has financial guarantee contract liabilities, which are obligations to pay specific amounts for indemnifying creditors' loss on insolvency of specific debtors according to initial or revised contract provisions of liabilities on the payment date. Financial guarantee contract liabilities are initially measured at their fair value less the direct transaction cost relating to the issuance. Subsequently, financial guarantee contract liabilities are measured at the higher of the amount of the loss allowance determined in accordance with K-IFRS No. 1109 'Financial instruments', and the amount initially recognized less the cumulative amortizations recognized in accordance with the K-IFRS No. 1115.

(14) Employee benefits liability

The defined benefit obligation is calculated by an independent actuary using the projected unit credit method.

(15) Provisions

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. The increase in provision due to passage of time is recognized as interest expense. If the existence of an obligation to transfer economic benefit is no longer probable, the related provision is reversed during the period. 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. In this case, any income arising from the third-party reimbursement is netted off against the related expense to be recognized in the separate statements of profit or loss from the recognition of provisions.

(16) Leases

1) Lessee

At the commencement or effective date of the contract that includes the lease element, the Company allocates the consideration of the contract to each lease element based on its relative stand-alone price. However, the Company applies a practical expedient that does not separate the non-lease component for a real estate lease and accounts for the non-lease component related to the lease element as a single lease element.

Lease liabilities are initially measured at the present value of the lease payments not paid as of the commencement of the lease. Generally, the Company uses the incremental borrowing rate as the discount rate. Lease liabilities are amortized in accordance with the effective interest method. When remeasurement of a lease liability, the relevant right-of-use assets is adjusted and the remeasurement amount is recognized in profit or loss if the carrying amount of the right-of-use assets is reduced to nil.

2. Material accounting policies and basis of preparation, Continued

As practical expedient, the Company does not recognize right-of-use assets and lease liabilities for short-term leases with a lease term of less than 12 months and low-value assets. The Company shall recognize the lease charges relating to these leases as expenses in accordance with the straight-line method over the lease term.

2) Lessor

As a lessor, the Company determines whether the lease is a finance lease or an operating lease at the inception of the lease. To classify each lease, the Company generally determines whether the lease transfers most of the risks and rewards of ownership of the underlying asset.

(17) Derivative financial instruments and hedge accounting

The Company operates fair value hedges to avoid the risk of fair value change, which is incurred from specific risk on assets, liabilities and firm contracts, and cash flow hedges to avoid the risk of future cash flow change, which is incurred from specific risk on expecting contracts.

At the inception of the hedge relationship, the Company documents the relationship between the hedging instrument and the hedged item, along with its risk management objectives and its strategy for undertaking various hedge transactions. Furthermore, at the inception of the hedge and on an ongoing basis, the Company assesses whether there is an economic relationship between the hedged item and the hedging instrument.

(18) Share-based payments

The Company measures the cost of share options granted to employees by reference to the estimated fair value at the date at which they are granted. The share-based payment expenses are recognized on a straight-line basis over the vesting period reflecting expected forfeiture rate. The Company determines the fair value of share option using the Black-Scholes option pricing model.

(19) Due from (to) customers for contract work

When contract costs incurred to date plus recognized profits less recognized losses exceed progress billing, the surplus is shown as amounts due from customers for contract work. For contracts where progress billings exceed contract costs incurred to date plus recognized profits less recognized losses, the surplus is shown as the amounts due to customers for contract work. Amounts received before the related work is performed are included in the separate statement of financial position, as a liability, as advances received. Amounts billed for work performed but not yet paid by the customer are included in the separate statement of financial position under trade receivables.

2. Material accounting policies and basis of preparation, Continued

(20) Government grants

The benefits of government loans at an interest rate lower than the market interest rate are treated as government grants, and the government grants are measured as the difference between the fair value of the government loans calculated based on the market interest rate and the consideration received.

Asset-related government grants are deducted when determining the carrying amount of assets and presented in the statements of financial position. The government grants are recognized in profit or loss over the useful life of the related assets by reducing depreciation expenses.

Revenue-related government grants are recognized as revenue over the period based on a systematic basis in order to respond to expenses intended to be compensated. Government grants received for immediate financial assistance provided to the Company without compensation for expenses or losses already incurred or related costs in the future are recognized in profit or loss during the period in which the right to receive them is incurred.

(21) Taxes and deferred tax

The minimum tax paid in accordance with Pillar Two Model Rules is corporate tax subject to K-IFRS No. 1012 'Income Tax'. The Company has applied the mandatory temporary exception to recognition of deferred tax assets and liabilities arising from Pillar Two income taxes, and recognizes current income tax as incurred. The impact of Pillar Two Model Rules is described in Note 29.

(22) Greenhouse gas emissions rights

In connection with Enforcement of Allocation and Trading of Greenhouse Gas Emissions Allowances, the Company applies the following accounting policies for greenhouse gas emissions rights and obligations.

1) Greenhouse gas emissions rights

Greenhouse gas emissions rights consist of the allowances received free of charge from the government and the ones purchased. The allowances received free of charge from the government are measured and recognized at zero, and emissions rights purchased are recognized at acquisition cost by including expenditures arising directly from the acquisition and any other costs incurred during normal course of the acquisition.

Greenhouse gas emissions rights are held by the Company to fulfill the legal obligation and recorded as intangible assets. To the extent that the portion to be submitted to the government within one year from the end of reporting period, the greenhouse gas emissions rights are classified as current assets. Greenhouse gas emissions rights recorded as intangible assets are initially measured at cost and substantially remeasured at cost less accumulated impairment losses.

Greenhouse gas emissions rights with the intention to sell within a short period are classified as current assets and measured at fair value, and changes in fair value are recognized in profit or loss for the year. Greenhouse gas emissions rights are derecognized on submission to the government or when no future economic benefits are expected from its use or disposal.

2. Material accounting policies and basis of preparation, Continued

2) Greenhouse gas emissions obligations

Greenhouse gas emissions obligations are the Company's present legal obligation to submit the greenhouse gas emissions allowances to the government and measured as the sum of the carrying amount of the allocated rights and best estimate of expenditure required to settle the obligation at the end of the reporting period for any excess emission. The Company derecognizes the emission obligations when the Company submits the emissions rights to the government.

(23) Revenue from contracts with customers

1) Identify performance obligations

The Company is mainly engaged in the businesses of power generation facilities, industrial facilities, manufacturing of casting and forging products and comprehensive construction business. The Company identifies separate performance obligations in the contracts and determines whether each of the performance obligations is satisfied at a point of time or over time under K-IFRS No. 1115.

The Company identified as a separate performance obligation if the customer benefits from the good or service on its own or together with other readily available resources and the entity's promise to transfer the good or service separately is identifiable from other promises in the contract. In addition, the transaction price is allocated to each performance obligation in proportion to its stand-alone selling price and if the stand-alone selling price is not directly observable then the entity estimates the amount by using a suitable method.

2) Obligations to perform over period of time

The Company manufactures and sells specialized power machinery which are built based on customer's orders designating the design elements. The Company recognizes revenue over time measuring the progress towards complete satisfaction of the performance obligation, only when the asset in its completed state has no alternative use to the Company and there is an enforceable right to payment for performance completed to date.

3) Measurement of the percentage-of-completion by using the input method

The Company contracts for EPC plant construction contracts and power generating service contracts including purchasing, manufacturing and installing boiler, turbine and others and generally proceeds over a long period of time. The Company recognizes revenue following percentage-of-completion method, judging whether the construction/service contracts are provided over period if it meets all the following conditions:

- The customers simultaneously acquire and consume benefits that the Company provides
- The Company creates or enhances the value of the asset that customers control

However, to represent performance degree faithfully, the Company recognizes the amount equal to the cost of the goods to perform the obligation as revenue if it meets all of the following conditions:

- Undistinguished goods when the contract initiate
- Expected that the customer can control significantly before the service is provided related to the goods
- The cost of the goods transferred is more significant than the total cost expected to fully perform the obligation
- The Company is provided the goods from the third party
- Not significantly involved in the design and production of the goods

2. Material accounting policies and basis of preparation, Continued

4) Variable consideration

The Company estimates an amount of variable consideration by using the method the Company expects to better predict the amount of consideration to which it will be entitled. The Company includes an amount of variable consideration in the transaction price only to the extent that it is highly probable that a significant reversal in the amount of cumulative revenue recognized will not occur when the return period expires.

5) Allocating the transaction price to performance obligations

The Company allocates the transaction price to each performance obligation on a relative stand-alone selling price basis. The Company uses adjusted market assessment approach to estimate the stand-alone selling price, however, for certain transactions, 'expected cost plus a margin approach' is used exceptionally.

6) Warranty obligation

The Company generally provide warranty contract with customers pursuant to the local laws and customs. Most of these warranties are assurance type of warranty and accrue provision based on reliable estimate under K-IFRS No. 1037, 'Provisions, Contingent Liabilities and Contingent Assets'.

However, if the Company provides extended warranty that is not assurance type of warranty under non-standardized contract, it is accrued as service type of warranty and separate to performance obligation requiring allocation of transaction price. Revenue is recognized over period of time.

3. Significant accounting estimates and assumptions

The estimates and underlying assumptions are reviewed on an ongoing basis. The estimates and underlying assumptions are based on historical experiences and other factors including expectation on possible future events. Actual results may differ from these estimates. The following are critical assumptions and key sources of estimation uncertainty at the end of reporting period, that have a significant risk of causing a material adjustment to the carrying amounts of the Company's assets and liabilities within the next financial year.

(1) Recognition of revenue

The Company recognizes revenue over time using the input method in relation to its performance obligation over time. Revenue is recognized as work progresses in the ratio of actual costs incurred to estimated total costs. In recognition of revenue according to the input method, the amount of revenue recognized differs depending on the measured progress, so it is required to estimate the method for measuring progress, estimated total contract costs, and changes in construction work. Any changes in the early stages of long-term projects in the scope and costs of project implementation in the construction period, and in construction plans may have a significant effect on the amount of revenue recognized.

(2) Defined benefit liability

The Company operates a defined benefit plan. Defined benefit liability is calculated by annual actuarial valuations as of the reporting date. In order to perform the actuarial valuations, assumptions for discount rates, future salary increases and others are required to be estimated.

(3) Provisions

Provisions are recognized when the Company has a present obligation (legal or constructive) as a result of a past event, and if it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and if a reliable estimate can be made of the amount of the obligation. In accordance with the relevant laws and practices, the estimated amounts may change to prescribe for additional provisions to be recognized in future periods.

(4) Deferred tax

Recognition and measurement of deferred tax assets and liabilities require judgment of the Company's management. Especially, the recognition of deferred tax asset and the scope of recognition are influenced by assumptions about future circumstances and judgment of management.

(5) Impairment of non-financial assets

The Company is assessing whether there is any indication that an asset may be impaired at the end of each reporting period. The Company estimates the recoverable amount of an asset when such indication exists or when an impairment test for an asset is required each year. Recoverable amount of an asset is the higher of its fair value less costs of disposal and its value in use. The recoverable amount is determined for individual assets. However, if an asset does not generate cash inflows that are largely independent of those from other assets, the recoverable amount is determined for the CGU to which the asset belongs. The asset is impaired if its carrying amount exceeds its recoverable amount and the carrying amount of the asset is reduced to its recoverable amount.

4. Financial risk management

The Company is exposed to various financial risks, such as market (foreign currency risk, interest rate risk and price risk), credit and liquidity, relating to the operations of the Company. The purpose of risk management policy is to minimize potential risks, which could have adverse effect on financial performance.

Financial risk management activities are performed by the treasury department in accordance with the risk management policies. In addition, the Company enters into derivative contracts to hedge against certain risks. The Company is trying to minimize the effect of financial risks by reorganizing financial risk management policy and monitoring financial risks regularly.

(1) Market risk**1) Foreign currency risk**

The Company's exposure to the risk of changes in foreign currency exchange rates relates primarily to the Company's operating activities and net investments in foreign subsidiaries. The Company's objective of foreign currency risk management is to minimize uncertainty and volatility arising from fluctuations in foreign currency exchange rates. Foreign currency risk is managed in accordance with the Company's policy on foreign currencies, and currency trading for speculative purposes is prohibited.

The Company's basis for foreign currency management is to reduce income/loss volatility. The Company reduces exposure to foreign currency risk by matching the inflow and the outflow of foreign currencies (natural hedge) and manages foreign currency risk by using currency derivatives, such as currency forwards, for the remaining exposure.

The book value of the Company's monetary assets and liabilities denominated in foreign currencies, which represents the maximum exposure to foreign currency risk as of December 31, 2023 and 2022 are as follows:

(In millions of won)		2023				
		USD	EUR	JPY	GBP	Others(*1)
Financial assets	₩	664,355	17,775	2,137	42,549	281,712
Financial liabilities		247,953	145,514	25,050	14,846	53,204
Net assets (liabilities)	₩	416,402	(127,739)	(22,913)	27,703	228,508
						521,961

(*1) Others are assets and liabilities denominated in foreign currencies other than USD, EUR, JPY and GBP.

(In millions of won)		2022				
		USD	EUR	JPY	GBP	Others(*1)
Financial assets	₩	440,142	10,998	4,178	101,020	156,728
Financial liabilities		325,951	179,462	23,367	3,181	44,642
Net assets (liabilities)	₩	114,191	(168,464)	(19,189)	97,839	112,086
						136,463

(*1) Others are assets and liabilities denominated in foreign currencies other than USD, EUR, JPY and GBP.

4. Financial risk management, Continued

A sensitivity analysis on the Company's income before tax for the year, assuming a 10% increase and decrease in currency exchange rates, as of December 31, 2023 and 2022 are as follows:

(In millions of won)	2023		2022	
	10% increase	10% decrease	10% increase	10% decrease
Income before tax impact	₩ 52,196	(52,196)	13,646	(13,646)

The above-mentioned sensitivity analysis is based on monetary assets and liabilities denominated in foreign currencies other than the Company's functional currency as of December 31, 2023 and 2022.

2) Interest rate risk

Interest rate risk is related to borrowings and bank deposits with floating interest rates, and related interest income and expense are exposed to interest rate risk. The Company is exposed to interest rate risk mainly due to its borrowing or deposit with floating interest rates. The purpose of interest rate risk management is to minimize uncertainty and financial expense arising from interest rate fluctuation.

To manage its interest rate risk, the Company minimizes external borrowings using internal funds, reduces borrowings with high interest rates, maintains an appropriate balance between borrowings with floating interest rate and fixed-interest rate and improves system for short and long-term borrowings. The Company manages its interest rate risk preemptively through regular monitoring and adjustments to the changing domestic and overseas markets conditions and nature of its interest rates.

Floating rate financial assets and liabilities exposed to interest rate risk as of December 31, 2023 and 2022 are as follows:

(In millions of won)	2023		2022	
Financial assets	₩	296,300		133,800
Financial liabilities		743,189		611,000
Net liabilities	₩	(446,889)		(477,200)

A sensitivity analysis on the Company's income before tax for the year, assuming a 1% increase and decrease in interest rates, as of December 31, 2023 and 2022 are as follows:

(In millions of won)	2023		2022	
	1% increase	1% decrease	1% Increase	1% decrease
Income before tax impact	₩ (4,469)	4,469	(4,772)	4,772

3) Price risk

The Company is exposed to equity price risks arising from its listed equity investments among financial instruments. The Company periodically measures the risk as the fair value or future cash flows of equity investments may fluctuate due to the changes in market prices. Significant investments in the Company's portfolio are individually managed, and acquisition and disposal are approved by the Board of Directors.

4. Financial risk management, Continued**(2) Credit risk**

The Company is exposed to credit risk that a counterparty will not meet its obligations under a financial instrument or customer contract, leading to a financial loss. Credit risk arises from trade and other receivables, debt instruments, deposits in financial institutions, derivative financial instruments and financial guarantee contracts.

The Company enters into transactions with customers having met a certain level of credit quality and maintains policies and procedures on financial assets to manage such risks. The credit quality of a new customer is assessed based on publicly announced financial information and the information provided by credit rating agencies. Such assessment is used as a basis for determining a customer's credit limit. Furthermore, collaterals and credit guarantees are obtained as security, if necessary. In addition, the Company periodically reassesses the credit quality of customers by auditing credit limits and adjusts the amount covered by collaterals when deemed necessary. The Company also monitors whether the collection of financial assets have been impaired to take relevant actions.

The carrying amount of financial assets represents the Company's maximum exposure. The maximum exposure to credit risk as of December 31, 2023 and 2022 are as follows:

(In millions of won)

		2023	2022
Cash and cash equivalents	₩	733,014	307,351
Short and long- term financial instruments		98,203	109,829
Trade receivables and other receivables		1,392,740	1,247,053
Deposits in financial institutions		47,239	36,691
Short and long- term investment in securities (excluding equity securities)		133,398	128,377
Derivative financial assets		34,323	77,642
Total	₩	<u>2,438,917</u>	<u>1,906,943</u>

In addition to the above, the maximum amounts to be paid for the principal debtor related to financial guarantee contract are described in Notes 31 (5), (6).

The Company's receivables' aging analysis as of December 31, 2023 and 2022 are as follows:

(In millions of won)

		2023				
		Receivables assessed for impairment individually or on a collective basis				
		Before maturity	0-3 months	3-6 months	6-12 months	More than 12 months
Trade receivables	₩	389,481	16,469	39,229	52,199	504,282
Loans and other receivables		1,661,975	21,448	3,541	5,220	74,010
Accrued income		59,599	-	-	-	12,588
Total	₩	<u>2,111,055</u>	<u>37,917</u>	<u>42,770</u>	<u>57,419</u>	<u>590,880</u>

4. Financial risk management, Continued

(In millions of won)

(In millions of won)		2022					
		Receivables assessed for impairment individually or on a collective basis					
		Before maturity	0–3 months	3–6 months	6–12 months	More than 12 months	Total
Trade receivables	₩	396,256	56,441	26,671	47,737	368,377	895,482
Loans and other receivables		1,415,470	25,023	10,129	3,944	76,431	1,530,997
Accrued income		27,464	-	-	-	16,720	44,184
Lease receivables		2,281	-	-	-	-	2,281
Total	₩	1,841,471	81,464	36,800	51,681	461,528	2,472,944

ECLs are measured at the present value of all cash shortfalls. If the Company does not have reasonable and supportable information that is available without overwhelming cost or effort to measure ECLs on an individual instrument basis, the Company can group financial instruments on the basis of shared credit risk characteristics.

(3) Liquidity risk

The Company is exposed to liquidity risk, which is the risk that it will encounter difficulties in fulfilling the obligations associated with its financial liabilities that are settled by delivering cash or another financial asset. The Company manages liquidity risk by matching the duration of financial assets and liabilities through estimating future cash flows from its operating, investing and financing activities, and securing moderate levels of liquidity in advance.

A summary of expected maturity for the Company's financial liabilities, etc. as of December 31, 2023 and 2022 are as follows:

(In millions of won)

		2023				
		Nominal cash flows according to contract				
	Book value	Total	Less than 1 year	1-2 years	2-5 years	More than 5 years
Principal on non-derivative financial liabilities	₩ 5,015,624	5,057,731	3,976,692	551,471	475,758	53,810
Interest on non-derivative financial liabilities	-	97,450	70,808	17,247	9,395	-
Derivative financial liabilities	89,225	73,933	49,793	26,803	(4,270)	1,607
Guarantee contract(*1)	-	3,041,069	3,041,069	-	-	-
Total	₩ 5,104,849	8,270,183	7,138,362	595,521	480,883	55,417

(*1) Maximum exposure associated with the guarantee contracts is the maximum amounts of the obligation (See Note 31).

4. Financial risk management, Continued

(In millions of won)

	Book value	2022				
		Nominal cash flows according to contract				
		Total	Less than 1 year	1–2 years	2–5 years	More than 5 years
Principal on non-derivative financial liabilities (*1)	₩ 4,996,657	5,045,813	3,286,307	1,513,551	167,141	78,814
Interest on non-derivative financial liabilities	-	155,507	111,711	42,244	1,552	-
Derivative financial liabilities	109,316	116,280	73,951	21,027	19,901	1,401
Guarantee contract(*2)	-	2,354,609	2,354,609	-	-	-
Total	₩ 5,105,973	7,672,209	5,826,578	1,576,822	188,594	80,215

(*1) This includes provision for payment guarantees in the amount of ₩54,855 million.

(*2) Maximum exposure associated with the guarantee contracts is the maximum amounts of the obligation (See Note 31).

The contractual amounts of financial liabilities in the above tables are calculated based on non-discounted cash flows (including estimated interest expense) and differ from its book values.

(4) Capital risk

The objective of the Company's capital risk management is to secure its ability to provide earnings to its shareholders and interested parties and sustain optimal capital structure to reduce the cost of capital. In order to sustain optimal capital structure, the Company uses a debt-to-equity ratio similar to other entities in the industry. Debt-to-equity ratio is calculated by dividing total liabilities by total equity.

Debt-to-equity ratios as of December 31, 2023 and 2022 are as follows:

(In millions of won)

	2023	2022
Total liabilities (A)	₩ 7,759,760	7,075,909
Total equity (B)	5,924,749	6,113,632
Debt-to-equity ratio (A/B)	130.97%	115.74%

5. Restricted financial assets

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

<i>(In millions of won)</i>		2023	2022	Restrictions
Short-term financial instruments	₩	30,595	36,080	Establishment of pledge related to financial loan and Government R&D projects(*1), and others
		-	36,499	Price Return Swap ("PRS") deposit(*2)
		42,000	12,000	Shared growth fund
Long-term financial instruments				Establishment of pledge related to financial loan, deposits for maintenance of checking accounts and leasehold deposit of Bundang Doosan Tower
		25,608	25,250	
Total	₩	98,203	109,829	

(*1) The amounts are restricted in use and may only be used for specific national R&D projects.

(*2) Deposit amount for the PRS contract that exchanges the profit from the changes in the stock price of Doosan Bobcat Inc., and the contracts were settled during the current period.

6. Long-term Investments in securities

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

(In millions of won)

Description	2023	2022
Financial assets as measured at FVOCI	₩ 451	3,885
Financial assets as measured at FVTPL	150,024	180,183
Total	₩ 150,475	184,068

(2) Details of the Company's investments in securities as of December 31, 2023 and 2022 are as follows:

(In millions of won)

Description	2023	2022
Long-term Financial assets as measured at FVOCI	₩ 451	3,885
Equity securities		
AI Asilah Desalination Company		
NuScale Power LLC	16,553	50,737
Kuwait Offset Fund(*3)	-	996
Others	73	73
SOC		
Gyeonggi East-West Beltway Co. (*1)	1,221	1,424
Investment in guarantee cooperative		
Machinery Financial Cooperative(*2)	8,701	8,655
Construction Guarantee Cooperative(*2)	82,354	81,535
Engineering Guarantee Insurance(*2)	7,116	6,813
Construction Industry Guarantee(*2)	15,521	14,844
TK Private Investment Limited Partnership (*4)	6,500	-
Others	433	427
Beneficiary certificates		
Gyeongnam GNTech Creative Economy Innovation Fund	977	1,672
Korea EXIM Bank - Public Carbon Fund (*3)	-	326
Emerald Technology Ventures	10,575	12,681
Subtotal	150,024	180,183
Total	₩ 150,475	184,068

(*1) It has been pledged as collateral for developers' project financing as of December 31, 2023 (See Note 32).

(*2) It has been pledged as collateral for the Company's debt as of December 31, 2023 (See Note 32).

(*3) Disposed in 2023.

(*4) Newly acquired in 2023.

6. Long-term Investments in securities, Continued

(3) Changes in financial assets as measured at fair value for the years ended December 31, 2023 and 2022 are as follows:

(In millions of won)		2023				
		January 1	Acquisition	Disposal	Gain or loss on valuation	December 31
Financial assets as measured at FVOCI	₩	3,885	-	-	(649)	451
Financial assets as measured at FVTPL		180,183	7,708	(1,596)	(36,271)	150,024
Total	₩	184,068	7,708	(1,596)	(36,920)	150,475

(In millions of won)		2022				
		January 1	Acquisition	Disposal	Gain or loss on valuation	December 31
Financial assets as measured at FVOCI	₩	3,885	-	-	-	3,885
Financial assets as measured at FVTPL		172,745	9,633	(18,094)	15,899	180,183
Total	₩	176,630	9,633	(18,094)	15,899	184,068

7. Trade and other receivables

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

(In millions of won)

		2023			2022		
		Gross	Allowance for doubtful accounts	Book value	Gross	Allowance for doubtful accounts	Book value
Current asset:							
Trade receivables	₩	1,001,660	(394,923)	606,737	895,482	(379,252)	516,230
Other receivables		569,006	(197,133)	371,873	361,787	(120,909)	240,878
Accrued income		72,187	(31,605)	40,582	44,184	(21,302)	22,882
Short-term loans		255,407	(160,934)	94,473	455,134	(78,023)	377,111
Lease receivables		-	-	-	2,281	-	2,281
Subtotal		1,898,260	(784,595)	1,113,665	1,758,868	(599,486)	1,159,382
Non-current asset:							
Long-term other receivables		58,136	(47,220)	10,916	63,136	(14,900)	48,236
Long-term loans		883,645	(615,486)	268,159	650,940	(611,505)	39,435
Subtotal		941,781	(662,706)	279,075	714,076	(626,405)	87,671
Total	₩	2,840,041	(1,447,301)	1,392,740	2,472,944	(1,225,891)	1,247,053

(2) Changes in allowance for doubtful accounts for the years ended December 31, 2023 and 2022 are as follows:

(In millions of won)

		2023			
		January 1	Provision for allowance	Others	December 31
Trade and other receivables:					
Trade receivables	₩	379,252	11,684	3,987	394,923
Other receivables		135,809	107,729	815	244,353
Accrued income		21,302	10,153	150	31,605
Short and long-term loans (*1)		689,528	27,230	59,662	776,420
Subtotal		1,225,891	156,796	64,614	1,447,301
Others:					
Due from customers for contract work		99,033	2,647	-	101,680
Deposits		2,800	-	-	2,800
Subtotal		101,833	2,647	-	104,480
Total	₩	1,327,724	159,443	64,614	1,551,781

(*1) Includes ₩54,855 million related to the membership fees return guarantee, transferred from other provision to allowance for doubtful accounts.

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Notes to the Separate Financial Statements, Continued

For the years ended December 31, 2023 and 2022

7. Trade and other receivables, Continued

		2022			
		January 1	Provision for (reversal of) allowance	Write-off	December 31
<i>(In millions of won)</i>					
Trade and other receivables:					
Trade receivables	₩	350,847	50,433	(34,755)	379,252
Other receivables		129,745	11,144	(6,252)	135,809
Accrued income		16,392	4,984	-	21,302
Short and long-term loans		584,105	113,443	-	689,528
Subtotal		1,081,089	180,004	(41,007)	1,225,891
Others:					
Due from customers for contract work		112,391	(13,358)	-	99,033
Deposits		2,800	-	-	2,800
Subtotal		115,191	(13,358)	-	101,833
Total	₩	1,196,280	166,646	(41,007)	1,327,724

8. Inventories

Inventories as of December 31, 2023 and 2022 are as follows:

(In millions of won)

	2023			2022		
	Acquisition cost	Valuation allowance	Book value	Acquisition cost	Valuation allowance	Book value
Finished goods	₩ 28,352	(5,041)	23,311	24,288	(5,617)	18,671
Work-in-process	202,557	(22,950)	179,607	254,665	(25,949)	228,716
Raw materials	43,130	(2,976)	40,154	49,740	(3,548)	46,192
Supplies	23,630	(2,533)	21,097	20,744	(2,621)	18,123
Materials-in-transit	26,779	-	26,779	14,609	-	14,609
Total	₩ 324,448	(33,500)	290,948	364,046	(37,735)	326,311

Gain(Loss) on inventory valuation recognized within the cost of sales amounted to ₩ 4,235 million and (-) ₩ 4,726 million for the years ended December 31, 2023 and 2022, respectively.

9. Derivatives

(1) Overview of the derivatives of the Company is as follows:

	Category	Summary
Fair value hedge	Forward exchange	Avoiding the risk of exchange rate fluctuations for foreign currency contracts that meet the requirements of the firm commitment
Cash flow hedge	Forward exchange	Avoiding the cash flow risk due to fluctuations in the exchange rate of the expected foreign currency collection and the expected foreign currency expenditure related to the purchasing of foreign materials
	Interest rate swap ("IRS")	Contracts that pay a fixed rate and receive a variable rate on the future interest payment date in order to avoid the risk of cash flow fluctuations due to fluctuations in interest rates
Trading	Forward exchange	Contracts that concluded a currency forward exchange contract to avoid the risk of future cash flow fluctuations, but did not apply hedging accounting
	Currency rate swap ("CRS")	Contracts that pay a fixed rate of local currency and receive a fixed rate of foreign currency on the future interest and principal payment date in order to avoid the cash flow risk due to fluctuations in exchange rate, but did not apply hedging accounting
	PRS	Derivative contracts for the purpose of trading that settles the difference in the stock price between the time of sales and time of settlement

The Company classified derivatives as non-current assets (liabilities) if their remaining maturity exceeds 12 months from the end of the reporting period to the contract maturity date, and current assets (liabilities) if they are within 12 months. When cash flow hedging is applied, the ineffective portion is recognized in profits (losses).

9. Derivatives, Continued

(2) Details of valuation of derivatives as of December 31, 2023 and 2022 are as follows:

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

				2023			
Buy		Sell		Derivative financial assets (liabilities)	Gain (loss) on valuation of derivative financial instruments	Accumulated other comprehensive income (loss) (*1)	Firm commitment assets (liabilities) (*2)
Currency	Amounts	Currency	Amounts				
Forward exchange:							
KRW	2,612,313	USD	2,087,880 ₩	(37,925)	(15,279)	4,197	43,276
KRW	203,110	EUR	144,558	(2,762)	(1,957)	(1,602)	625
KRW	157,907	JPY	15,871,930	6,879	3,041	(1,300)	(8,294)
KRW	129,703	Others		(5,100)	(6,232)	(562)	368
USD	892,550	KRW	1,137,891	(878)	782	542	2,107
EUR	393,798	KRW	564,972	(2,595)	2,653	(3,398)	(424)
JPY	25,263,800	KRW	258,735	(17,492)	(5,879)	(10,711)	485
Others		KRW	69,264	1,389	1,716	1,248	(9)
IRS				57	-	57	-
CRS				3,525	3,525	-	-
	Subtotal			(54,902)	(17,630)	(11,529)	38,134
				-	-	2,600	-
	Tax effect			₩ (54,902)	(17,630)	(8,929)	38,134

(*1) In consideration of the amounts adjusted in sales and cost of sales, the effective portion of changes in fair value of cash flow hedges amounting to (-) ₩8,929 million, net of tax, was recognized in accumulated other comprehensive income or loss.

(*2) In consideration of the amounts adjusted in sales, firm commitment assets of ₩63,243million and firm commitment liabilities of ₩25,109 million were recognized in the separate statements of financial position by applying a fair value hedge accounting.

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Notes to the Separate Financial Statements, Continued

For the years ended December 31, 2023 and 2022

9. Derivatives, Continued

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

2022							
Buy		Sell		Derivative financial assets (liabilities)	Gain (loss) on valuation of derivative financial instruments	Accumulated other comprehensive income (loss) (*1)	Firm commitment assets (liabilities) (*2)
Currency	Amounts	Currency	Amounts				
Forward exchange:							
KRW	2,467,931	USD	2,009,370 ₩	(43,132)	(14,051)	3,588	82,850
KRW	65,379	EUR	47,060	1,209	1,243	200	(1,819)
KRW	67,650	JPY	5,822,910	7,715	2,249	1,067	(13,432)
KRW	344,402	Others		16,888	15,949	1,353	(9,771)
USD	532,345	KRW	671,009	(4,415)	(8,740)	4,499	12,425
EUR	165,430	KRW	227,151	(2,852)	(3,673)	823	530
JPY	8,718,190	KRW	96,869	(8,672)	519	(7,311)	502
Others		KRW	103,363	(4,721)	(2,415)	(3,535)	1,339
IRS				691	-	691	-
CRS				22,614	19,782	-	-
PRS(*3)				(16,999)	(16,999)	-	-
	Subtotal			(31,674)	(6,136)	1,375	72,624
Tax effect				-	-	(319)	-
	Total		₩	(31,674)	(6,136)	1,056	72,624

(*1) In consideration of the amounts adjusted in sales and cost of sales, the effective portion of changes in fair value of cash flow hedges amounting to ₩1,056 million, net of tax, was recognized in accumulated other comprehensive income or loss.

(*2) In consideration of the amounts adjusted in sales, firm commitment assets of ₩95,467 million and firm commitment liabilities of ₩22,843 million were recognized in the separate statements of financial position by applying a fair value hedge accounting.

(*3) The Company has entered into PRS contract that exchanges the profit from the changes in the stock price of Doosan Bobcat Inc..

10. Financial instruments

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

(In millions of won)

		2023				
		Financial assets as measured at amortized cost	Financial assets as measured at FVOCI	Financial assets as measured at FVTPL	Other financial assets (*1)	
						Carrying amounts Fair value
Cash and cash equivalents	₩	733,014	-	-	-	733,014 733,014
Short and long-term financial instruments		98,203	-	-	-	98,203 98,203
Long-term investment in securities		-	451	150,024	-	150,475 150,475
Derivative financial assets		-	-	4,673	29,650	34,323 34,323
Trade and other receivables		1,392,740	-	-	-	1,392,740 1,392,740
Deposits		47,239	-	-	-	47,239 47,239
Total	₩	<u>2,271,196</u>	<u>451</u>	<u>154,697</u>	<u>29,650</u>	<u>2,455,994</u> <u>2,455,994</u>

(*1) Other financial assets include derivatives as hedged item.

(In millions of won)

		2022				
		Financial assets as measured at amortized cost	Financial assets as measured at FVOCI	Financial assets as measured at FVTPL	Other financial assets (*1)	
						Carrying amounts Fair value
Cash and cash equivalents	₩	307,351	-	-	-	307,351 307,351
Short and long-term financial instruments		109,829	-	-	-	109,829 109,829
Long-term investment in securities		-	3,885	180,183	-	184,068 184,068
Derivative financial assets		-	-	44,557	33,085	77,642 77,642
Trade and other receivables		1,247,053	-	-	-	1,247,053 1,247,053
Deposits		36,691	-	-	-	36,691 36,691
Total	₩	<u>1,700,924</u>	<u>3,885</u>	<u>224,740</u>	<u>33,085</u>	<u>1,962,634</u> <u>1,962,634</u>

(*1) Other financial assets include derivatives as hedged item.

10. Financial instruments, Continued

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

(In millions of won)

(In millions of won)		2023				
		Financial liabilities as measured at amortized cost	Financial liabilities as measured at FVTPL	Other financial liabilities (*1)	Carrying amounts	Fair value
Trade and other payables	₩	1,514,924	-	-	1,514,924	1,514,924
Borrowings and bonds		3,081,973	-	-	3,081,973	3,081,973
Derivative financial liabilities		-	7,018	82,207	89,225	89,225
Financial guarantee liabilities		-	-	164	164	164
Lease liabilities		155,412	-	-	155,412	155,412
Others		263,151	-	-	263,151	263,151
Total	₩	5,015,460	7,018	82,371	5,104,849	5,104,849

(*1) Other financial liabilities include derivatives as hedged item and others.

(In millions of won)

(In millions of won)		2022				
		Financial liabilities as measured at amortized cost	Financial liabilities as measured at FVTPL	Other financial liabilities (*1)	Carrying amounts	Fair value
Trade and other payables	₩	1,269,006	-	-	1,269,006	1,269,006
Borrowings and bonds		3,263,861	-	-	3,263,861	3,263,861
Derivative financial liabilities		-	17,376	91,940	109,316	109,316
Financial guarantee liabilities		-	-	180	180	180
Lease liabilities		172,304	-	-	172,304	172,304
Others		236,451	-	-	236,451	236,451
Total	₩	4,941,622	17,376	92,120	5,051,118	5,051,118

(*1) Other financial liabilities include derivatives as hedged item and others.

(3) Fair value hierarchy of financial instruments

As of December 31, 2023 and 2022, the Company uses the following hierarchy for determining and disclosing the fair value of financial instruments:

Level 1: Quoted (unadjusted) prices in active markets for identical assets or liabilities

Level 2: Inputs other than quoted prices that are observable for the asset or liability either directly or indirectly

Level 3: Inputs that are not based on observable market data (unobservable inputs)

The fair value of financial instruments traded in active markets is based on quoted market prices at the dates of the separate statements of financial position. These instruments are included in level 1, Instruments included in level 1 primarily comprise listed equity investments classified as trading securities.

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

10. Financial instruments, Continued

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

Specific valuation techniques used to value financial instruments include:

- quoted or dealer price of similar instruments.
- the fair value of forward foreign exchange contracts determined by using forward exchange rates at the reporting date, with the resulting value discounted to present value.
- other financial techniques such as discounted cash flow analysis.

The level of fair value measurements of financial instruments as of December 31, 2023 and 2022 are as follows:

(In millions of won)

		2023			
		Level 1	Level 2	Level 3	Total
Financial assets measured at fair value:					
Measured at FVOCI	₩	-	-	451	451
Measured at FVTPL		16,566	4,673	133,458	154,697
Others		-	29,650	-	29,650
Total	₩	<u>16,566</u>	<u>34,323</u>	<u>133,909</u>	<u>184,798</u>
Financial liabilities measured at fair value:					
Measured at FVTPL	₩	-	7,018	-	7,018
Others		-	82,207	164	82,371
Total	₩	<u>-</u>	<u>89,225</u>	<u>164</u>	<u>89,389</u>

(In millions of won)

		2022			
		Level 1	Level 2	Level 3	Total
Financial assets measured at fair value:					
Measured at FVOCI	₩	-	-	3,885	3,885
Measured at FVTPL		50,749	44,557	129,434	224,740
Others		-	33,085	-	33,085
Total	₩	<u>50,749</u>	<u>77,642</u>	<u>133,319</u>	<u>261,710</u>
Financial liabilities measured at fair value:					
Measured at FVTPL	₩	-	17,376	-	17,376
Others		-	91,940	180	92,120
Total	₩	<u>-</u>	<u>109,316</u>	<u>180</u>	<u>109,496</u>

The above tables exclude financial assets and financial liabilities which are not measured at fair value as differences between the carrying amounts and fair values are not significant.

10. Financial instruments, Continued

Assumptions used for the measurement of financial assets at fair value based on level 3 valuation techniques as of December 31, 2023 are as follows:

	Valuation techniques	Discount rate	Note
Gyeonggi East-West Beltway Co.	Dividend discount model	12.93%	Expected dividend cash flow for each financial period
Construction Guarantee Cooperative	Estimated sales price valuation method	-	Expected sales price
Machinery Financial Cooperative	Estimated sales price valuation method	-	Expected sales price
Engineering Guarantee Insurance	Estimated sales price valuation method	-	Expected sales price
Construction Industry Guarantee	Estimated sales price valuation method	-	Expected sales price
Gyeongnam GNTech Creative Economy Innovation Fund	Net asset value assessment	-	Fair value of net asset
Emerald Technology Venture	Estimated sales price valuation method	-	Return rate on investment
AI Asilah Desalination Company	Net asset value assessment	-	Fair value of net asset
Electric Contractors' Financial Cooperative	Estimated sales price valuation method	-	Expected sales price
Information & Communication Financial Cooperative	Estimated sales price valuation method	-	Expected sales price
Fire Guarantee	Estimated sales price valuation method	-	Expected sales price
Others	Estimated sales price valuation method, etc.	-	Expected sales price and others

Changes in financial assets included in Level 3 of the fair value hierarchy for the years ended December 31, 2023 and 2022 are summarized as follows and there is no transfer between levels of the fair value.

(In millions of won)

2023							
	January 1	Acquisition	Disposal	Others	Gain or loss on valuation	Other comprehensive income(loss)	December 31
Financial assets as measured at FVOCI	₩ 3,885	-	-	(2,785)	-	(649)	451
Financial assets as measured at FVTPL	129,434	7,708	(1,690)	-	(1,994)	-	133,458
Total	₩ 133,319	7,708	(1,690)	(2,785)	(1,994)	(649)	133,909

(In millions of won)

2022							
	January 1	Acquisition	Disposal	Reclassified category(*1)	Gain or loss on valuation	Other comprehensive income(loss)	December 31
Financial assets as measured at FVOCI	₩ 3,885	-	-	-	-	-	3,885
Financial assets as measured at FVTPL	162,549	9,633	(9,737)	(35,692)	2,681	-	129,434
Total	₩ 166,434	9,633	(9,737)	(35,692)	2,681	-	133,319

(*1) Reclassified from level 3 to level1 because the financial instruments were converted to be traded in active market in 2022.

10. Financial instruments, Continued

(4) Gain or loss by categories of financial instruments

1) Gain or loss by categories of financial instruments for the years ended December 31, 2023 and 2022 are as follows:

(In millions of won)

(In millions of won)		2023						
		Interest income (expense)	Dividend income	Gain or loss on valuation (*1)	Impairment loss on financial instruments	Gain or loss on disposal	Gain or loss on financial guarantee	Other Comprehensive income(loss) (*2)
Financial assets:								
Measured at								
amortized cost	₩	46,395	-	-	(156,767)	(27)	634	-
Measured at								
FVTPL		-	2,537	(36,271)	-	94	-	-
Measured at								
OCI		-	-	-	-	-	-	(649)
Financial liabilities:								
Measured at								
amortized cost	₩	(165,130)	-	-	-	-	-	-
Others		-	-	-	-	-	-	-

(*1) The amounts of gains and losses of foreign exchange and derivatives are excluded.

(*2) Income tax effect is excluded.

(In millions of won)

		2022					
		Interest income (expense)	Dividend income	Gain or loss on valuation(*1)	Impairment loss on financial instruments	Gain or loss on disposal	Gain or loss on financial guarantee
Financial assets:							
Measured at							
amortized cost	₩	24,900	-	-	(180,033)	(129)	1,231
Measured at							
FVTPL		-	2,056	15,899	-	1,272	-
Financial liabilities:							
Measured at							
amortized cost	₩	(141,735)	-	-	-	-	-
Others		-	-	-	-	-	(1,632)

(*1) The amounts of gains and losses of foreign exchange and derivatives are excluded.

Gains or losses on translation or transaction of foreign currencies arising from foreign currency transactions except for derivative financial instruments have been mostly incurred from financial assets and liabilities measured at amortized cost.

10. Financial instruments, Continued

2) Details of gains and losses on valuation and settlement of derivative financial instruments for the years ended December 31, 2023 and 2022 are as follows:

(In millions of won)

		2023		
		Gain or loss on valuation	Gain or loss on settlement	Other comprehensive income (loss) (*1)
Derivatives measured at FVTPL	₩	197	9,105	-
Derivatives for fair value hedge		(16,819)	-	-
Derivatives for cash flow hedge		(1,008)	450	(12,904)
Total	₩	(17,630)	9,555	(12,904)

(*1) Amounts in other comprehensive income or loss exclude deferred tax effect.

(In millions of won)

		2022		
		Gain or loss on valuation	Gain or loss on settlement	Other comprehensive income (loss) (*1)
Derivatives measured at FVTPL	₩	14,007	17,226	-
Derivatives for fair value hedge		(13,356)	-	-
Derivatives for cash flow hedge		(6,787)	(2,754)	2,057
Total	₩	(6,136)	14,472	2,057

(*1) Amounts in other comprehensive income or loss exclude deferred tax effect.

Above gains or losses of financial instruments for the years ended December 31, 2023 and 2022 include selling and administrative expenses, finance income or expenses, other non-operating income or expenses and other comprehensive income or loss from each financial instrument.

(5) Financial assets and financial liabilities subject to an enforceable master netting arrangement or similar agreement as of December 31, 2023 are as follows:

(In millions of won)

		Eligible for legal right to offset		
		Total assets (liabilities)	Offset amounts	Amounts after offset
Derivative financial assets	₩	61,319	(30,860)	30,459
Derivative financial liabilities		(119,803)	30,860	(88,943)

DOOSAN ENERBILITY CO., LTD.
Notes to the Separate Financial Statements, Continued
For the years ended December 31, 2023 and 2022
11. Investments in subsidiaries, associates and joint ventures

(1) Details of share of investment in subsidiaries, associates and joint ventures as of December 31, 2023 and 2022 are as follows:

(In millions of won)

	Location of incorporation	Percentage of ownership (%)	2023	2022
Subsidiaries:				
Doosan Fuel Cell Co., Ltd. (*1, 2, 17)	Korea	30.33	₩ 697,451	892,730
Doosan Cuvex Co., Ltd.	Korea	100.00	358,263	358,263
Doosan Power Systems S.A. ("DPS S.A.") (*6, 10, 18)	Luxembourg	100.00	291,137	80,858
Doosan Water UK Ltd.	UK	100.00	-	-
Doosan Ukudu Power, LLC	USA	100.00	1	1
Doosan Enerbility Vietnam Co., Ltd.	Vietnam	100.00	203,038	203,038
Doosan Enerbility Japan Corp.	Japan	100.00	1,993	1,993
Doosan Enerbility America Holdings Inc.	USA	100.00	146,008	146,008
Doosan HF Controls Corp.	USA	100.00	5,642	5,642
Doosan Power Systems India Private Ltd.	India	99.90	-	-
Doosan Heavy Industries Muscat LLC	Oman	70.00	-	-
Doosan Power Systems Arabia Company Limited	Saudi Arabia	51.00	3,968	3,968
Doosan GridTech Inc. (*16)	USA	100.00	-	23,911
Azul Torre Construction Corporation (*3)	Philippines	40.00	-	-
Osung Power O&M Co., Ltd.	Korea	100.00	360	360
PT. Doosan Heavy Industries Indonesia	Indonesia	83.64	761	761
Doosan Heavy Industries Malaysia Sdn. Bhd	Malaysia	100.00	-	-
Doosan Bobcat Inc. (*1,2,11)	Korea	46.11	2,197,990	2,435,990
D20 Capital, LLC	USA	100.00	63,596	63,596
Doosan Geosolution Co., Ltd. (*13)	Korea	100.00	28,300	-
Doosan Recycle Solution Co., Ltd. (*13)	Korea	100.00	49,100	-
Subtotal			4,047,608	4,217,119
Associates:				
Doosan Engineering & Construction Co., Ltd. (*1, 14)	Korea	46.35	108,957	173,702
Samcheok Blue Power Co., Ltd. (*4,5)	Korea	9.00	43,568	43,568
Daejung Offshore Wind Power Co., Ltd.	Korea	26.65	3,196	3,196
Hychangwon Co., Ltd. (*4)	Korea	25.74	7,000	7,000
Tuwaiq Casting & Forging Company (*5)	Saudi Arabia	15.00	43,926	43,926
Multi-asset ESG Marine Wind Power Private Equity Fund 1 st (*9, 12, 15, 19)	Korea	65.00	-	8,500
BUNDANG DOOSAN TOWER REIT Co., Ltd. (*5,7)	Korea	18.60	45,973	-
Subtotal			252,620	279,892
Joint ventures:				
The Zenith Holdings Ltd. (*8)	Korea	31.75	2,031	2,031
Total			₩ 4,302,259	4,499,042

11. Investments in subsidiaries, associates and joint ventures, Continued

- (*1) As of December 31, 2023, it is provided as collateral for the debts of the Company (See Note 32).
- (*2) Although the Company's ownership interest in the investee is less than 50%, the Company assessed that it exercises control over the investee based on its holdings relative to the size and dispersion of ownership interests held by other equity holders and the voting patterns in previous shareholders' meetings.
- (*3) Although the Company's ownership interest in the investee is less than 50%, it is classified as a consolidated subsidiary since the Company is considered to have the voting rights in the board of directors, and others.
- (*4) Investments in the investee have been pledged as collateral for the Company's project financing and completion guarantee (See Note 32).
- (*5) Although the Company's ownership interest in the investee is less than 20%, the investee is classified as an associate considering the exercise of voting rights in the board of directors and others.
- (*6) As December 31, 2023, investments in the investee have been pledged as collateral for export bond insurance limit contract signed with Korea Export Insurance Corporation (See Note 32).
- (*7) Newly acquired through in-kind dividends from Doosan Cuvex Co., Ltd. in 2023.
- (*8) It is classified as a joint venture in accordance with agreement requiring consents from every party holding the joint control over the entity when decision making in related activities.
- (*9) Although the Company's ownership interest in the investee is more than 50%, the Company assessed that it does not hold control over the decisions in relevant activities and classified as an associate.
- (*10) Additionally acquired through debt-to-equity swap in 2023.
- (*11) Part of the investments was sold in 2023.
- (*12) Additionally acquired in 2023.
- (*13) Newly acquired in 2023.
- (*14) As of December 31, 2023, the carrying value exceeds its recoverable amount and recognized ₩ 64,745 million as impairment loss (other non-operating expenses).
- (*15) As of December 31, 2023, the carrying value exceeds its recoverable amount and recognized ₩ 90 million as impairment loss (other non-operating expenses).
- (*16) As of December 31, 2023, the carrying value exceeds its recoverable amount and recognized ₩ 23,911 million as impairment loss (other non-operating expenses).
- (*17) As of December 31, 2023, the carrying value exceeds its recoverable amount and recognized ₩ 195,279 million as impairment loss (other non-operating expenses).
- (*18) As of December 31, 2023, the carrying value exceeds its recoverable amount and recognized ₩ 41,782 million as impairment loss (other non-operating expenses).
- (*19) Reclassified to assets held-for-sale in 2023 (See Note 35).

11. Investments in subsidiaries, associates and joint ventures, Continued

(2) Impairment on investment in subsidiaries, associates and joint ventures

1) Doosan Fuel Cell Co., Ltd.

The Company recognized an impairment loss (other non-operating expenses) of ₩ 195,279 million based on the impairment test of Doosan Fuel Cell Co., Ltd. for the year ended December 31, 2023 as the carrying amount exceeds the aggregate recoverable amount of Doosan Fuel Cell Co., Ltd..

The recoverable amount of Doosan Fuel Cell Co., Ltd. is valued based on fair value less cost to sell calculated by the independent valuation expert in 2023. Fair value less costs to sell is calculated by deducting the cost of disposal after adding a management right premium to the share price.

2) DPS S.A.

The Company recognized an impairment loss (other non-operating expenses) of ₩ 41,782 million based on the impairment test of DPS S.A. for the year ended December 31, 2023 as the carrying amount exceeds the aggregate recoverable amount of DPS S.A.

The recoverable amount of DPS S.A. is valued based on value-in-use calculated by the independent valuation expert in 2023. The value in use was computed based on expected future cash flow from impairment test date as of today and discount rate of 7.0~10.7%

3) Multi-asset ESG Marine Wind Power Private Equity Fund 1st

The Company recognized an impairment loss (other non-operating expenses) of ₩ 90 million based on the impairment test of Multi-asset ESG Marine Wind Power Private Equity Fund 1st for the year ended December 31, 2023 as the carrying amount exceeds the aggregate recoverable amount of Multi-asset ESG Marine Wind Power Private Equity Fund 1st.

The Company decided that the asset value appropriately reflects recoverable amount of Multi-asset ESG Marine Wind Power Private Equity Fund 1st and assessed it as fair value less cost to sell. Net fair value is calculated as the value of financial assets and PP&E and others less cost to sell.

4) Doosan GridTech Inc.

The Company recognized an impairment loss (other non-operating expenses) of ₩ 23,911 million based on the impairment test of Doosan GridTech Inc. for the year ended December 31, 2023 as the carrying amount exceeds the aggregate recoverable amount of Doosan GridTech Inc..

The recoverable amount of Doosan GridTech Inc. is valued based on value-in-use calculated by the independent valuation expert in 2023. The value in use was computed based on expected future cash flow from impairment test date as of today and discount rate of 12.4%.

5) Doosan Engineering & Construction Co., Ltd.

The Company recognized an impairment loss (other non-operating expenses) of ₩ 64,745 million based on the impairment test of Doosan Engineering & Construction Co., Ltd. for the year ended December 31, 2023 as the carrying amount exceeds the aggregate recoverable amount of Doosan Engineering & Construction Co., Ltd..

The recoverable amount of Doosan Engineering & Construction Co., Ltd. is valued based on fair value less cost to sell calculated by the independent valuation expert in 2023. Net asset value assessment was applied to calculate fair value.

DOOSAN ENERBILITY CO., LTD.
Notes to the Separate Financial Statements, Continued
For the years ended December 31, 2023 and 2022
12. Property, plant and equipment

(1) Changes in property, plant and equipment for the years ended December 31, 2023 and 2022 are as follows:

(In millions of won)

	2023							
		Land	Buildings and structures	Machinery	Others	Construction in progress	Right-of-use assets	Total
As of January 1, 2023	₩	2,574,442	200,528	194,299	20,461	42,653	119,764	3,152,147
Acquisition/ capital expenditure		-	655	3,005	1,492	89,226	15,824	110,202
Transfer (*1)		(1,039)	21,143	18,534	10,939	(67,904)	(342)	(18,669)
Disposals(*2)		(1,753)	(611)	(1,509)	(5)	-	(3,555)	(7,433)
Depreciation		-	(25,225)	(34,998)	(8,809)	-	(23,418)	(92,450)
Impairment		-	-	-	-	(240)	-	(240)
Others		7,908	-	-	-	-	-	7,908
As of December 31, 2023	₩	2,579,558	196,490	179,331	24,078	63,735	108,273	3,151,465
- Acquisition cost	₩	1,165,832	776,777	1,190,932	195,053	100,082	165,477	3,594,153
- Accumulated depreciation(*3)		-	(580,287)	(1,011,601)	(170,975)	(36,347)	(57,204)	(1,856,414)
- Revaluation surplus		1,413,726	-	-	-	-	-	1,413,726

(*1) Certain land, buildings, and construction in progress have been reclassified to assets held-for-sale (See Note 35).

(*2) Includes the amount due to contract cancelation of the right-of-use assets (See Note 14).

(*3) Includes the accumulated impairment losses.

As of December 31, 2023, certain property, plant and equipment and others have been pledged as collateral for borrowings (See Note 32).

(In millions of won)

	2022							
		Buildings and structures	Machinery	Others	Construction in progress	Right-of-use assets	Total	
As of January 1, 2022	₩	2,613,833	216,224	219,090	22,802	88,363	149,183	3,309,495
Acquisition/ capital expenditure		1	15	713	556	53,975	10,039	65,299
Transfer(*1)		(36,133)	8,509	13,757	5,548	(81,468)	(13,842)	(103,629)
Disposals(*2)		(1,442)	(495)	(979)	(734)	(2,110)	(1,645)	(7,405)
Depreciation		-	(23,701)	(38,282)	(7,711)	-	(23,971)	(93,665)
Impairment		(1,803)	-	-	-	(15,952)	-	(17,755)
Others		(14)	(24)	-	-	(155)	-	(193)
As of December 31, 2022	₩	2,574,442	200,528	194,299	20,461	42,653	119,764	3,152,147
- Acquisition cost	₩	1,168,028	756,036	1,190,752	190,885	78,760	166,054	3,550,515
- Accumulated depreciation(*3)		-	(555,508)	(996,453)	(170,424)	(36,107)	(46,290)	(1,804,782)
- Revaluation surplus		1,406,414	-	-	-	-	-	1,406,414

(*1) Certain land, buildings, and construction in progress have been reclassified to investment properties (See Note 15).

(*2) Includes the amount due to contract cancelation of the right-of-use assets (See Note 14).

(*3) Includes the accumulated impairment losses.

12. Property, plant and equipment, Continued**(2) Borrowing costs**

Capitalized borrowing costs for the years ended December 31, 2023 and 2022 are as follows:

<i>(In millions of won)</i>		2023	2022
Capitalized borrowing costs	₩	1,136	605
Interest rate of borrowing costs		4.82%	3.73%

(3) Depreciation

Details of depreciation on property, plant and equipment for the years ended December 31, 2023 and 2022 are as follows:

<i>(In millions of won)</i>		2023	2022
Cost of sales	₩	78,935	78,911
Selling and administrative expenses		13,515	14,754
Total	₩	<u>92,450</u>	<u>93,665</u>

(4) Revaluation of land

In order to determine the fair value of the land, the Company requested fair value evaluation to a recognized independent evaluation agency, and the revaluation date was October 31, 2023.

The fair value of the land was assessed based on the standard land price, and based on the principles of marketability and substitution, the trade cases where similarity is recognized in the neighborhood where the object is located are calculated and the ratification price is calculated by the comparison of transaction cases. The final appraisal was determined by reviewing the adequacy of the amounts calculated based on the standard quoted land prices.

The standard evaluation of the standard land price is based on the public land price of the comparative standard land located in the neighboring area. The price is determined by integrating price-forming factors such as demand and marketability. The other factors are determined by calculating the gap between targets and valuation precedents, taking into account the neighboring land price level and the real estate economic trends.

As of December 31, 2023, the carrying amount of the land measured by applying the cost model is ₩ 1,165,832 million.

13. Intangible assets

(1) Changes in intangible assets for the years ended December 31, 2023 and 2022 are as follows:

(In millions of won)

	2023			
	Industrial property rights	Development costs	Other intangible assets	Total
As of January 1, 2023	₩ 7,241	960,603	34,817	1,002,661
Increase	1,749	128,562	21,543	151,854
Internal development	-	128,562	-	128,562
Individual acquisition	1,749	-	1,044	2,793
Transfer from other assets	-	-	20,499	20,499
Decrease	(1,532)	(29,439)	(9,910)	(40,881)
Amortization	(1,532)	(25,071)	(8,996)	(35,599)
Impairment loss	-	(157)	-	(157)
Disposal	-	-	(914)	(914)
Transfer to other assets	-	(3,578)	-	(3,578)
Transfer to other expenses	-	(633)	-	(633)
As of December 31, 2023	₩ 7,458	1,059,726	46,450	1,113,634

(In millions of won)

	2022			
	Industrial property rights	Development costs	Other intangible assets	Total
As of January 1, 2022	₩ 3,279	905,133	66,178	974,590
Increase	4,971	138,491	15,050	158,512
Internal development	-	138,491	-	138,491
Individual acquisition	4,971	-	88	5,059
Transfer from other assets	-	-	14,962	14,962
Decrease	(1,009)	(83,021)	(46,411)	(130,441)
Amortization	(1,009)	(43,216)	(16,328)	(60,553)
Impairment loss	-	(34,922)	(29,760)	(64,682)
Disposal	-	-	(232)	(232)
Transfer to other assets	-	(2,591)	(91)	(2,682)
Transfer to other expenses	-	(2,292)	-	(2,292)
As of December 31, 2022	₩ 7,241	960,603	34,817	1,002,661

The carrying amounts of intangible assets with indefinite useful lives including membership and others as of December 31, 2023 and 2022 amounted to ₩ 15,715 million and ₩16,630 million, respectively.

(2) Research and development costs

Research and development costs expensed as incurred for the years ended December 31, 2023 and 2022 amounted to ₩ 26,745 million and ₩25,029 million, respectively.

13. Intangible assets, Continued**(3) Recognition criteria of development cost**

The new R&D project is approved by the new business technology committee semi-annually, considering the commercial feasibility and others and it is decided whether to continue or stop the R&D through reviewing the appropriateness of investment. After completion of technical development, the Company performs a final review of the appropriateness of development costs through commercial operation. The Company classifies the projects into research or technology development projects based on the capitalization criteria (technical feasibility, intention, future economic benefits). Expenditure on research project is recognized as an expense when it is incurred and expenditure on technology development project is recognized as an intangible asset.

(4) Details of development costs as of December 31, 2023 and 2022 are as follows:*(In millions of won)*

		2023		2022	
	Description	Book value	Remaining amortization period(*1)	Book value	Remaining amortization period(*1)
Development costs	Large-sized Gas Turbine	₩ 727,992	-	655,072	-
	Gas Turbine 7F Retrofit	59,252	-	51,635	-
	Mid-sized Gas Turbine				
	Development Phase 1	560	5.58 years	661	6.58 years
	Mid-sized Gas Turbine				
	Development Phase 2	37,777	-	37,777	-
	8MW Offshore Wind Power	49,951	-	45,023	-

(*1) Remaining amortization period is disclosed for assets which amortization has been initiated and disclosed as '-' for assets not yet amortized.

13. Intangible assets, Continued

(5) Intangible assets for which an impairment loss has been recognized for the years ended December 31, 2023 and 2022 are as follows:

(In millions of won)		2023				
Description	Acquisition cost	Impairment loss		Accumulated amortization	Book value	Method used to assess recoverability
		Loss	Accumulated			
Development costs						
Development of rota automated inspection system	₩ 874	157	536	338	-	Value in use

(In millions of won)

		2022				
Description	Acquisition cost	Impairment loss		Accumulated amortization	Book value	Method used to assess recoverability
		Loss	Accumulated			
Development costs(*1)						
Development of boiler-USC element technology	₩ 4,503	3,644	3,644	859	-	Value in use
Development of boiler-USC element technology (I&C sector)	3,347	2,748	2,748	599	-	Value in use
Development of large-scale freshwater element technology	2,731	2,731	2,731	-	-	Value in use
Development ST-USC element technology	2,212	1,924	1,924	288	-	Value in use
Others	32,136	23,875	23,875	8,261	-	Value in use
Subtotal	44,929	34,922	34,922	10,007	-	
Other intangible assets						
Golf membership	14,424	5,097	8,766	-	5,658	Net fair value
Reclamation license and other	63,823	24,663	54,812	9,011	-	Value in use
Subtotal	78,247	29,760	63,578	9,011	5,658	
Total	₩ 123,176	64,682	98,500	19,018	5,658	

(*1) The carrying amount is recognized as an impairment loss, as the value in use decreased due to changes in industry environment.

13. Intangible assets, Continued**(6) Reversal of impairment loss of intangible assets**

There is no reversal of impairment loss of intangible assets for the years ended December 31, 2023 and 2022.

(7) Statement of income items included (reversal of) impairment loss

For the years ended December 31, 2023 and 2022, statement of profit (loss) items the Company recognized (reversal of) impairment loss are as follows:

<i>(In millions of won)</i>		2023	2022
Other non-operating expenses	₩	157	64,682

(8) Capitalized borrowing costs for the years ended December 31, 2023 and 2022 are as follows:

<i>(In millions of won)</i>		2023	2022
Capitalized borrowing costs	₩	33,030	22,907
Interest rate of borrowing costs		4.82%	3.73%

(9) Details of amortization of intangible assets for the years ended December 31, 2023 and 2022 are as follows:

<i>(In millions of won)</i>		2023	2022
Cost of sales	₩	29,025	45,728
Selling and administrative expenses		6,574	14,825
Total	₩	35,599	60,553

13. Intangible assets, Continued

(10) Greenhouse gas emission permits and obligations

1) The emission permits that are received free of charge from the government as the 3rd planning period (from year 2021 to 2025) as of December 31, 2023 are as follows:

<i>(In tons (tCO₂-eq))</i>	2021	2022	2023	2024	2025	Total
Free emission permits	260,526	260,526	260,526	258,086	258,086	1,297,750

2) Changes in emission permits for the years ended December 31, 2023 and 2022 are as follows:

<i>(In tons (tCO₂-eq))</i>	2023				
	2022	2023	2024	2025	Total
As of January 1, 2023 (*1)	302,876	260,736	258,294	258,294	1,080,200
Cancellation of free permits	(574)	-	-	-	(574)
Submission to the government	(214,550)	-	-	-	(214,550)
Sale of free permits	(30,000)	-	-	-	(30,000)
Carried forward	(57,752)	57,752	-	-	-
As of December 31, 2023	-	318,488	258,294	258,294	835,076

(*1) Including succession of allowances received free of charge.

	2022					
<i>(In tons (tCO2-eq))</i>	2021	2022	2023	2024	2025	Total
As of January 1, 2022	264,750	260,526	260,526	258,086	258,086	1,301,974
Succession of allowances received						
free of charge	210	210	210	208	208	1,046
Cancellation of free permits	(519)	-	-	-	-	(519)
Submission to the government	(200,301)	-	-	-	-	(200,301)
Sale of free permits	(22,000)	-	-	-	-	(22,000)
Carried forward	(42,140)	42,140	-	-	-	-
As of December 31, 2022	-	302,876	260,736	258,294	258,294	1,080,200

As of Permit that are received free of charge from the government was measured at zero book value.

3) Details of emission permits held for short-term trading purpose for the years ended December 31, 2023 and 2022 is as follows:

<i>(In tons (tCO₂-eq), in millions of won)</i>	2023		2022	
	Quantity	Book Value	Quantity	Book Value
Beginning balance	55,248 ₩	1,657	- ₩	-
Acquisition	-	-	55,248	1,657
Gain(Loss) on Valuation	-	(939)	-	-
Ending balance	55,248 ₩	718	55,248 ₩	1,657

4) The estimate of greenhouse gas emissions as of December 31, 2023 was 230,000 tons (tCO₂-eq) and no emission liabilities are recognized as it is not expected to exceed the free emission permits.

14. Lease

(1) Changes in right-of-use assets for the years ended December 31, 2023 and 2022 are as follows:

(In millions of won)

		2023			
		Land	Buildings	Other tangible assets	Total
As of January 1, 2023	₩	375	116,203	3,186	119,764
Acquisition		25	10,782	5,017	15,824
Depreciation		(138)	(19,494)	(3,786)	(23,418)
Contract cancelation		(129)	(2,542)	(884)	(3,555)
Transfer		143	(444)	(41)	(342)
As of December 31, 2023	₩	276	104,505	3,492	108,273
- Acquisition cost	₩	531	154,279	10,667	165,477
- Accumulated depreciation		(255)	(49,774)	(7,175)	(57,204)

(In millions of won)

		2022			
		Land	Buildings	Other tangible assets	Total
As of January 1, 2022	₩	1,026	142,427	5,730	149,183
Acquisition		6	9,016	1,017	10,039
Depreciation		(657)	(19,987)	(3,327)	(23,971)
Contract cancelation		-	(1,411)	(234)	(1,645)
Transfer(*1)		-	(13,842)	-	(13,842)
As of December 31, 2022	₩	375	116,203	3,186	119,764
- Acquisition cost	₩	1,327	154,812	9,915	166,054
- Accumulated depreciation		(952)	(38,609)	(6,729)	(46,290)

(*1) Reclassified from right-of-use assets to investment properties due to the change in sub-lease ratio with BUNDANG DOOSAN TOWER in 2022.

(2) Changes in the lease liabilities for the years ended December 31, 2023 and 2022 are as follows:

(In millions of won)

		2023	2022
As of January 1	₩	172,304	183,629
Payment of lease		(38,090)	(30,843)
Acquisition		12,585	10,039
Interest expense		10,721	11,064
Contract cancelation		(1,627)	(1,709)
Others		(481)	124
As of December 31	₩	155,412	172,304

14. Lease, Continued

(3) The details of depreciation of right-of-use assets for the years ended December 31, 2023 and 2022 are as follows:

(In millions of won)

		Depreciation of right-of-use assets	
		2023	2022
Cost of sales	₩	13,388	12,261
Selling and administrative expenses		10,030	11,710
Total	₩	23,418	23,971

(4) The maturity of lease receivables and liabilities as of December 31, 2023 are as follows:

(In millions of won)

		Contractual nominal cash flow				
		Total	Less than 1 year	1-2 years	2-5 years	More than 5 years
Lease liabilities	₩	189,986	31,714	29,513	77,621	51,138

(5) Expenses incurred in short-term leases and low-value asset lease that are not included in the right-of-use assets for the years ended December 31, 2023 and 2022 are as follows:

(In millions of won)

		2023	2022
Cost of sales	₩	7,656	6,837
Selling and administrative expenses		246	156
Total	₩	7,902	6,993

The Company, as an intermediate lessor, recognized a lease income amounted to ₩2,345 million and ₩2,456 million from the sub-lease of right-of-use assets for the years ended December 31, 2023 and 2022, respectively.

15. Investment Property

(1) Changes in the investment properties for the years ended December 31, 2023 and 2022 are as follows:

		2023			
<i>(In millions of won)</i>		Land	Construction in progress	Buildings	Total
As of January 1, 2023	₩	73,950	37,837	47,911	159,698
Transfer (*1)		(21,552)	-	(1,414)	(22,966)
Depreciation		-	-	(5,522)	(5,522)
Impairment loss		-	(37,837)	-	(37,837)
As of December 31, 2023	₩	52,398	-	40,975	93,373
- Acquisition cost	₩	61,364	53,790	56,701	171,855
- Accumulated depreciation(*2)		(8,966)	(53,790)	(15,726)	(78,482)

(*1) Amounts are reclassified from investment properties to assets held-for-sale in 2023 (See Note 35).

(*2) Including accumulated impairment loss.

		2022			
<i>(In millions of won)</i>		Land	Construction in progress	Buildings (*1)	Total
As of January 1, 2022	₩	44,130	-	35,404	79,534
Transfer		29,820	37,837	16,442	84,099
Depreciation		-	-	(3,935)	(3,935)
As of December 31, 2022	₩	73,950	37,837	47,911	159,698
- Acquisition cost	₩	75,753	53,790	55,172	184,715
- Accumulated depreciation(*2)		(1,803)	(15,953)	(7,261)	(25,017)

(*1) Including amount reclassified from right-of-use assets to investment properties due to the change in sub-lease ratio with BUNDANG DOOSAN TOWER in 2022.

(*2) Including accumulated impairment loss.

(2) Rental income from investment properties for the years ended December 31, 2023 and 2022 are ₩19,192 million and ₩9,670 million, respectively.

15. Investment Property, Continued

(3) Changes in the right-of-use assets which are classified as investment properties for the years ended December 31, 2023 and 2022 are as follows:

<i>(In millions of won)</i>		2023	2022
Beginning balance	₩	43,999	33,906
Transfer		-	13,842
Depreciation		(5,474)	(3,749)
Ending balance	₩	<u>38,525</u>	<u>43,999</u>

(4) Fair value of investment properties excluding right-of-assets for the years ended December 31, 2023 and 2022 are as follows:

<i>(In millions of won)</i>		2023	2022
Land	₩	68,155	54,887
Construction in progress		-	37,837
Buildings		2,533	2,455
Total	₩	<u>70,688</u>	<u>95,179</u>

The fair value of the investment property was assessed by an independent evaluation agency, and the Company believes that changes in the fair value following the fair value assessment performed upon initial recognition of the investment property are not material. Meanwhile, the fair value of investment properties is classified as Level 3 based on the input variables used in the valuation. The valuation techniques used to measure fair value include the individual valuation method, transaction case comparison method, and profit return method.

However, for right-of-use assets classified as investment properties, the value-in-use based on K-IFRS No. 1116 'Lease' was used as fair value, and recorded as initial book value. As there was no significant change in assumptions such as cash flow and interest rates after the acquisition, the value-in-use according to IFRS 16 'Lease' was considered as a proxy for fair value, and fair value evaluation was not performed.

16. Bonds and Borrowings**(1) Borrowings**

1) Short-term borrowings as of December 31, 2023 and 2022 are as follows:

(In millions of won)

Type of Borrowings	Lender	Annual interest rate (%) as of December 31, 2023	2023	2022
Denominated in KRW	Korean Development Bank ("KDB") and others(*1)	2.00 ~ 6.55	₩ 753,250	948,250
Denominated in foreign currencies	Woori Bank and others	0.53 ~ 6.97	214,584	301,532
	Total		₩ 967,834	1,249,782

(*1) The Company's PP&E and others have been pledged as collateral for borrowings (See Notes 31 and 32).

2) Long-term borrowings as of December 31, 2023 and 2022 are as follows:

(In millions of won)

Type of borrowings	Lender	Maturity	Annual interest rate (%) as of December 31, 2023	2023	2022
Denominated in KRW	NH investment and securities Co., Ltd. and others (*1)	2024.03.25~2025.10.24	1.10 ~ 6.85	₩ 1,260,664	1,272,714
Denominated in foreign currencies	SABB	2025.12.31	8.17	157,189	-
	Subtotal			1,417,853	1,272,714
	Less: Current portion of long-term borrowings			(1,129,105)	(155,009)
	Less: Discount on long-term borrowings			(1,559)	(4,425)
	Total			₩ 287,189	1,113,280

(*1) The Company's PP&E and others have been pledged as collateral for borrowings (See Notes 31 and 32).

DOOSAN ENERBILITY CO., LTD.

Notes to the Separate Financial Statements, Continued

For the years ended December 31, 2023 and 2022

16. Bonds and borrowings, Continued

(2) Bonds

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

(In millions of won)					
Type	Series	Maturity	Annual interest rate (%) as of December 31, 2023	2023	2022
Public offering bond	73	2024.05.30	5.10	₩ 80,000	80,000
	74	2024.09.27	6.50	80,000	80,000
Public offering bond in foreign currencies (*1)	-	-	-	-	380,190
	-	2026.07.17	5.50	386,820	-
Privately placed bond (*1)	64	-	-	-	15,000
	65	-	-	-	14,000
	66	-	-	-	14,500
	67	-	-	-	10,000
	68	-	-	-	5,000
	69	-	-	-	10,000
	70	-	-	-	5,000
	71	-	-	-	10,000
	72	2024.03.25	4.80	100,000	100,000
	75	2024.07.31	6.30	15,000	-
	76	2025.02.24	6.50	18,000	-
	77	2025.03.28	6.50	24,000	-
Convertible bonds	59	-	-	-	1,655
	60	-	-	-	21,719
Subtotal				703,820	747,064
Add: Redemption premium				-	1,604
Less: Conversion adjustment				-	(491)
Less: Current portion of long-term bonds				(274,743)	(486,658)
Less: Discount on bonds				(5,974)	(2,387)
Total				₩ 423,103	259,132

(*1) The ordinary shares of Doosan Bobcat Inc. and Doosan Fuel Cell. Co., Ltd. have been pledged as collateral for public offering bond in foreign currencies and privately placed bonds (See Notes 31 and 32).

16. Bonds and borrowings, Continued

2) As of December 31, 2023, convertible bonds succeeded from spin-off and merger with HD Hyundai Infracore Co., Ltd. are summarized as follows:

No.	Issue date	Maturity date	Coupon rate	YTM	Exercise period	Exercise price (in won)	Issuance value
59th	July 1, 2021(*1)	June 8, 2023	2.87%	4.82%	2021.06.08~ 2023.05.08	₩8,907/ share	₩1,641 million (Par value: ₩1,655 million)
60th	July 1, 2021(*2)	August 3, 2023	2.81%	4.96%	2021.08.03~ 2023.07.03	₩10,506/ share	₩21,584 million (Par value: ₩21,719 million)

(*1) Among the 65th convertible bonds issued by HD Hyundai Infracore Co., Ltd. on June 8, 2020, it was been succeeded by the Company from a spin-off and merger with HD Hyundai Infracore Co., Ltd. on July 1, 2021.

(*2) Among the 69th convertible bonds issued by HD Hyundai Infracore Co., Ltd. on August 3, 2020, it was been succeeded by the Company from a spin-off and merger with HD Hyundai Infracore Co., Ltd. on July 1, 2021.

① Early redemption

No.	Exercise Period of early redemption right
59th	The claimant of this bond may exercise early redemption right as a whole or in part against the face value of convertible bonds at the interest payment date after June 8, 2022.
60th	The claimant of this bond may exercise early redemption right as a whole or in part against the face value of convertible bonds at the interest payment date after August 3, 2022.

② Redemption at maturity

No.	Redemption at maturity
59th	On June 8 2023, the maturity date of the bond, 106.2537% of the remaining principal of the bond is to be paid in full.
60th	On August 3 2023, the maturity date of the bond, 106.9085% of the remaining principal of the bond is to be paid in full.

③ Calculation of exercise price

The exercise price is adjusted when there is an increase in paid-in capital through the issuance of ordinary shares at a price lower than the market price, bonus issue, stock dividends, or capitalization of reserves, before exercising the stock warrants, or when there is an issuance of stock purchase warrants or debt securities with warrants.

16. Bonds and borrowings, Continued

3) Changes in convertible bonds for the years ended December 31, 2023 are as follows:

(In millions of won)

		January 1	Exercise/Amortization (*1)	December 31
Convertible bond	₩	23,374	(23,374)	-
Redemption premium		1,604	(1,604)	-
Discount on bond		(31)	31	-
Conversion adjustment		(491)	491	-
Book value	₩	<u>24,456</u>	<u>(24,456)</u>	<u>-</u>
Consideration for conversion right (other capital surplus)	₩	760	(760)	-

(*1) Convertible bonds have been converted to common stock due to the exercise of conversion rights during the current period (See Note 19).

17. Defined benefit liabilities

The Company operates defined benefit plans, and the cost of providing benefits under the defined benefit plans is determined using the projected unit credit method on the actuarial valuation of the present value of its defined benefit obligations.

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

<i>(In millions of won)</i>		2023	2022
Present value of defined benefit obligations	₩	426,695	347,206
Fair value of plan assets(*1)		(233,831)	(234,089)
Defined benefit liabilities	₩	192,864	113,117

(*1) Include employer contributions of ₩545 million and ₩567 million to the National Pension Service as of December 31, 2023 and 2022, respectively.

(2) Expenses recognized in separate statements of profit or loss for the years ended December 31, 2023 and 2022 are as follows:

<i>(In millions of won)</i>		2023	2022
Current service cost	₩	27,985	29,942
Net interest cost		6,307	4,588
Past service cost		-	16,575
Total	₩	34,292	51,105

(3) Classification of expenses related to the employee benefit liability for the years ended December 31, 2023 and 2022 are as follows:

<i>(In millions of won)</i>		2023	2022
Cost of sales	₩	23,620	31,501
Selling and administrative expenses		10,672	19,604
Total	₩	34,292	51,105

17. Defined benefit liabilities, Continued

(4) Changes in the present value of the defined benefit obligations for the years ended December 31, 2023 and 2022 are as follows:

<i>(In millions of won)</i>	2023	2022
As of January 1	₩ 347,206	345,652
Current service costs	27,985	29,942
Transfer from related parties	287	1,103
Transfer to related parties	(400)	(329)
Interests	18,349	12,394
Remeasurement loss (gain) in OCI:		
Actuarial changes arising from changes in demographic assumptions	8,021	(42)
Actuarial changes arising from changes in financial assumptions	13,821	(66,835)
Others	40,076	29,279
Past service cost	-	16,575
Benefits paid	(28,650)	(20,533)
As of December 31	₩ 426,695	347,206

(5) Changes in the fair value of plan assets for the years ended December 31, 2023 and 2022 are as follows:

<i>(In millions of won)</i>	2023	2022
As of January 1	₩ 234,089	240,139
Expected return on plan assets	12,042	7,806
Transfer from related parties	237	608
Transfer to related parties	(187)	(83)
Remeasurement loss in OCI	(705)	(4,137)
Benefits paid	(11,645)	(10,226)
Transfer to national pension service	-	(18)
As of December 31	₩ 233,831	234,089

In relation to the defined benefit plans, the reasonable estimates of future employer contributions during the year 2024 amount to ₩228,600 million. In addition, the actual return on plan assets for the years ended December 31, 2023 and 2022 amounts to ₩11,337 million and ₩3,669 million, respectively.

(6) The principal assumptions used in determining employee benefit obligation for the years ended December 31, 2023 and 2022 are as follows:

	2023	2022
Discount rate	4.20%	5.40%
Future salary increase rate	Technical employee 3.00% Office employee 3.00% Executive 2.00%	Technical employee 4.00% Office employee 4.00% Executive 1.50%

17. Defined benefit liabilities, Continued

(7) Details of fair value of plan assets as of December 31, 2023 and 2022 are as follows:

<i>(In millions of won)</i>		2023	2022
Insurance contracts	₩	135,895	104,893
Bank deposits		43,802	23,905
Trust funds and others		54,134	105,291
Total	₩	<u>233,831</u>	<u>234,089</u>

(8) Details of a sensitivity analysis on the defined benefit obligation for changes in the significant assumptions as of December 31, 2023 are as follows:

<i>(In millions of won)</i>		1%p increase	1%p decrease
Discount rate	₩	(27,491)	30,031
Future salary increase rate		22,171	(21,167)

(9) The weighted average maturity of defined benefit obligations is approximately 7.08 years as of December 31, 2023.

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Notes to the Separate Financial Statements, Continued

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18. Provisions

Changes in significant provisions for the years ended December 31, 2023 and 2022 are as follows:

(In millions of won)		2023							
		January 1	Arising during the year	Unused amounts reversed	utilized	Others (*1)	December 31	Less: Current	Non-current
Provisions for construction warranties	₩	123,905	35,488	(7,664)	(26,365)	-	125,364	(11,405)	113,959
Provisions for construction losses		58,378	8,723	(24,477)	-	-	42,624	(42,624)	-
Others(*2)		111,426	55,122	(16,277)	(19,678)	(54,855)	75,738	(68,615)	7,123
Total	₩	293,709	99,333	(48,418)	(46,043)	(54,855)	243,726	(122,644)	121,082

(*1) Other provision related to the membership fees return guarantee was transferred to allowance for doubtful accounts during the current period.

(*2) The company has provided to guarantees for supplemental funding of ₩ 5,256 million to Gyeonggi East-West Beltway Co. in relation to the construction of to Bongdam-Songsan Expressway construction project, which was recognized as other provision during the current period (See Note 31).

(In millions of won)		2022							
		January 1	Arising during the year	Unused amounts reversed	utilized	Others	December 31	Less: Current	Non-current
Provisions for construction warranties	₩	103,522	38,968	(708)	(17,877)	-	123,905	(18,864)	105,041
Provisions for construction losses		31,408	34,797	(7,827)	-	-	58,378	(58,378)	-
Others(*1)		149,822	1,964	(2,957)	(22,904)	(14,499)	111,426	(104,961)	6,465
Total	₩	284,752	75,729	(11,492)	(40,781)	(14,499)	293,709	(182,203)	111,506

(*1) As of December 31, 2022, it included ₩54,855 million in provisions related to guaranteeing the return of membership fees.

The Company estimated expenses required to settle the Company's obligations on product warranties, refunds, maintenance and others based on the level of warranty period, historical experience and other considerations.

DOOSAN ENERBILITY CO., LTD.

Notes to the Separate Financial Statements, Continued

For the years ended December 31, 2023 and 2022

19. Capital stock

The Company is authorized to issue 2,000,000,000 shares, with a par value of ₩5,000 per share and the number of ordinary shares issued as of December 31, 2023 and 2022 is 640,561,146 shares and 638,308,033 shares, respectively. The number of shares with limited voting rights under Korean Commercial Code as of December 31, 2023 and 2022 is 95,978 treasury shares.

On March 28, 2023, the Company issued ordinary shares of 2,253,113 shares due to the exercising of conversion rights of convertible bonds.

Details in capital stock and paid-in capital in excess of par value as of December 31, 2023 and 2022 are as follows:

(In millions of won except for share, in shares)	Number of shares		Capital stock			Paid-in capital in excess of par value		
	Ordinary shares	Preference shares	Ordinary shares	Preference shares(*1)	Total	Ordinary shares	Preference shares	Total
Balance at								
December 31, 2023	640,561,146	- ₩	3,202,805	64,522	3,267,327	1,225,998	-	1,225,998
Balance at								
December 31, 2022	638,308,033	-	3,191,539	64,522	3,256,061	2,362,505	-	2,362,505

(*1) Redeemable convertible preference shares were purchased and retired using voluntary reserves before prior year, and there is no reduction in capital stock.

20. Capital surplus

Capital surplus as of December 31, 2023 and 2022 are summarized as follows:

<i>(In millions of won)</i>		2023	2022
Paid-in capital in excess of par value (*1)	₩	1,225,998	2,362,505
Other capital surplus		449,108	449,655
Total	₩	<u>1,675,106</u>	<u>2,812,160</u>

(*1) During the current period, accumulated deficits of ₩ 1,150,542 million were compensated using paid-in capital in excess of par value (See Note 23).

21. Other components of equity

(1) Other components of equity as of December 31, 2023 and 2022 are summarized as follows:

<i>(In millions of won)</i>		2023	2022
Stock options	₩	174	386
Treasury stock		(2,135)	(2,135)
Total	₩	<u>(1,961)</u>	<u>(1,749)</u>

(2) Stock option

The Company has granted stock options to its executives. The settlement method for stock options includes the issuance of new shares, issuance of treasury shares, or cash settlement. The type of settlement method chosen is determined based on the Board of Directors' decision at the time of exercise. These stock options require a vesting condition of two-year continuous employment from the grant date.

1) The terms and conditions of stock options granted as of December 31, 2023 are summarized as follows:

<i>(In won, shares)</i>					
Grant date	Number of shares to be issued	Exercise period	Exercise price		Estimated fair value as of the grant date
Mar 28 2014	14,900	Mar 28 2017 ~ Mar 27 2024	₩ 34,550	₩	7,948
Mar 21 2014(*1)	5,851	Mar 21 2017 ~ Mar 20 2024	19,867		9,402
Total	<u>20,751</u>				

(*1) It had been succeeded by spin-off and merger with HD Hyundai Infracore Co., Ltd. in 2021.

21. Other components of equity, Continued

2) Change in the stock options for the year ended December 31, 2023 is summarized as follows:

<i>(In shares)</i>		Number of shares to be issued		
Grant date		January 1	Retired	December 31
Mar 29 2013		14,565	(14,565)	-
Mar 21 2014		5,851	-	5,851
Mar 28 2014		20,800	(5,900)	14,900
Total		41,216	(20,465)	20,751

<i>(In millions of won)</i>		Valuation		
Grant date		January 1	Retired	December 31
Mar 29 2013	₩	165	(165)	-
Mar 21 2014		55	-	55
Mar 28 2014		166	(47)	119
Total	₩	386	(212)	174

No compensation expenses are recognized for the years ended December 31, 2023 and 2022 and are expected to be recognized in the future periods.

3) The estimated fair value was calculated using the modified fair value method and assumptions applied to this method are summarized as follows:

Grant date	Risk free rate(*1)	Expected exercise period	Expected volatility	Expected dividend yield
Mar 28 2014	2.88%	3 years	34.72%	15.00%
Mar 21 2014	3.27%	6.5 years	42.29%	0.00%

(*1) Based on a treasury bond yield rate following by the expected exercise period.

22. Accumulated other comprehensive income

(1) Accumulated other comprehensive income as of December 31, 2023 and 2022 are summarized as follows:

<i>(In millions of won)</i>		2023	2022
Loss on valuation of FVOCI	₩	(9,765)	(9,254)
Gain (loss) on valuation of derivative financial instruments		(8,929)	1,056
Gain on revaluation of assets		1,026,635	1,080,126
Total	₩	<u>1,007,941</u>	<u>1,071,928</u>

(2) Details of income taxes on OCI items directly reflected in equity as of December 31, 2023 and 2022 are as follows:

<i>(In millions of won)</i>		2023		
		Balance before tax	Tax effect	Balance after tax
Loss on valuation of FVOCI	₩	(12,698)	2,933	(9,765)
Gain (loss) on valuation of derivative financial instruments		(11,529)	2,600	(8,929)
Gain on revaluation of assets		1,412,780	(386,145)	1,026,635
Total	₩	<u>1,388,553</u>	<u>(380,612)</u>	<u>1,007,941</u>

<i>(In millions of won)</i>		2022		
		Balance before tax	Tax effect	Balance after tax
Loss on valuation of FVOCI	₩	(12,049)	2,795	(9,254)
Gain (loss) on valuation of derivative financial instruments		1,375	(319)	1,056
Gain on revaluation of assets		1,406,414	(326,288)	1,080,126
Total	₩	<u>1,395,740</u>	<u>(323,812)</u>	<u>1,071,928</u>

23. Accumulated deficits

(1) Accumulated deficits as of December 31, 2023 and 2022 are as follows:

<i>(In millions of won)</i>		2023	2022
Legal reserve	₩	82,966	82,966
Voluntary reserve		42,807	42,807
Unappropriated retained earnings (Undisposed accumulated deficit)		(149,436)	(1,150,542)
Total	₩	(23,663)	(1,024,769)

(2) Changes in accumulated deficits for the years ended December 31, 2023 and 2022 are as follows:

<i>(In millions of won)</i>		2023	2022
Unappropriated retained earnings (Undisposed accumulated deficit)	₩	(149,436)	(1,150,542)
Unappropriated retained earnings at the beginning of the year		-	35,011
Profit (loss) for the period		(104,179)	(1,211,843)
Remeasurements of defined benefit liability		(46,397)	25,698
Gain on revaluation of lands		1,140	592
Voluntary reserve and others		-	-
Reserves for sinking Funds		-	-
Disposition of accumulated deficits		149,436	1,150,542
Paid-in capital in excess of par value		149,436	1,150,542
Unappropriated retained earnings at the end of the year	₩	-	-

The proposed date of disposition of accumulated deficits for 2023 will be March 26, 2024 and the approved date of appropriation of retained earnings for 2022 was March 29, 2023.

(3) There is no dividend for the years ended December 31, 2023 and 2022.

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Notes to the Separate Financial Statements, Continued

For the years ended December 31, 2023 and 2022

24. Revenue

(1) Revenue for the years ended December 31, 2023 and 2022 are as follows:

<i>(In millions of won)</i>		2023	2022
Revenue from contracts with customers			
Sales of goods	₩	328,544	243,401
Construction contracts		6,165,780	5,043,962
Subtotal		6,494,324	5,287,363
Others			
Hedging losses		(115,704)	(125,414)
Dividend income		253,581	112,307
Others		19,661	10,183
Subtotal		157,538	(2,924)
Total	₩	6,651,862	5,284,439

(2) Revenue from contracts with customers for the years ended December 31, 2023 and 2022 are disaggregated as follows.

<i>(In millions of won)</i>		2023	2022
Primary geographical market			
Domestic	₩	2,964,415	2,714,593
Americas		160,926	178,133
Asia		1,787,362	1,484,237
Middle East		1,528,288	871,836
Europe		51,233	37,741
Others		2,100	823
Total	₩	6,494,324	5,287,363
Timing of revenue recognition			
At a point in time	₩	328,544	243,401
Over time		6,165,780	5,043,962
Total	₩	6,494,324	5,287,363

24. Revenue, Continued**(3) Contract balances**

The following table provides information about receivables, contract assets and contract liabilities from contracts with customers as of December 31, 2023 and 2022.

(In millions of won)

		2023	2022
Receivables, which are included in 'trade and other receivables'	₩	619,490	518,848
Contract assets		1,259,650	1,072,966
Contract liabilities		1,924,019	1,464,165

The contract assets primarily relate to the Company's rights to consideration for work completed but not billed at the reporting date. The contract assets are transferred to receivables when the rights become unconditional.

The contract liabilities primarily relate to the advance consideration received from customers for construction, for which revenue is recognized over time. Of the contract liabilities as of December 31, 2022, the amount of recognized as revenue in 2023 is ₩1,270,152 million.

(4) Changes in transaction price for construction contract allocated to the performance obligations satisfied over time

Transaction prices allocated to the remaining performance obligations as of December 31, 2023 include contracts whose initial expected duration of performance obligations are less than one year old but not include contracts in which recognize the right to payment as revenue that corresponds directly with the value to the customer of the Company's performance completed to date.

Changes in transaction price for construction contracts allocated to the performance obligations satisfied over time for the years ended December 31, 2023 and 2022 are as follows:

(In millions of won)

(In millions of won)			2023			
			January 1	Increase (Decrease)	Revenue recognized	December 31
Project name						
VAPCO and others	Vung Ang II Power Project and others	₩	12,459,890	7,919,190	6,165,780	14,213,300

(In millions of won)

(In millions of won)			2022			
			January 1	Increase (Decrease)	Revenue recognized	December 31
VAPCO and others	Project name					
	Vung Ang II Power Project and others	₩	11,173,049	6,330,803	5,043,962	12,459,890

24. Revenue, Continued

- (5) As of December 31, 2023 and 2022, the Company shall recognize as an asset for the incremental costs of obtaining a contract with a customer that is, agent fee if the Company expects to recover those costs.

<i>(In millions of won)</i>		2023	2022
Incremental costs of obtaining a contract with a customer recognized as an asset	₩	44,361	22,661
The amount of amortization recognized as cost of sales		19,616	24,180

An asset recognized in accordance with above shall be amortized on the same basis that revenue is recognized over time based on the percentage-of-completion of the specific contract concerned.

- (6) As of December 31, 2023 and 2022, the Company shall recognize an asset from the costs incurred to fulfill a contract if those costs relate directly to a contract or to an anticipated contract the Company can specifically identify. The Company believes that these costs generate or enhance resources of the Company that will be used in satisfying performance obligations in the future and are expected to be recovered.

<i>(In millions of won)</i>		2023	2022
Costs incurred to fulfill a contract recognized as an asset	₩	77,338	131,418
The amount of amortization recognized as cost of sales		70,463	77,737

An asset recognized in accordance with above shall be amortized on a systematic basis that is consistent with the transfer to the customer of the goods or services to which the asset relates.

- (7) Changes in profit or loss in current and future reporting periods and the book value of due from (to) customers for contracts work (excluding foreign currency translation effect) resulting from provision for construction loss, changes in total contract revenue and in total estimated contract costs for construction contracts in progress as of December 31, 2023 are as follows:

<i>(In millions of won)</i>		Provision for construction loss	Changes in total contract revenue	Changes in total contract cost	Effect on profit (loss) for the period	Effect on profit (loss) for the future	Changes in due from (to) customer for contract work
Vung Ang II Power Project and others	₩	42,624	493,306	203,111	44,720	245,475	44,720

Impacts on current and future profit (loss) were calculated based on total contract revenue and costs which were estimated based on the current circumstances as of December 31, 2023. Those estimations may change in the future.

24. Revenue, Continued

- (8) As of December 31, 2023, details of contracts that the revenue was recognized based on the percentage-of-completion measured by input method, and whose contract revenue is more than 5% of sales of the year ended December 31, 2022 are as follows. There is no contract that the Company decided not to disclose due to the prohibition by related regulations or contracts.

(In millions of won)

	Contract date	Due date / Delivery date (*1)	Percentage-of- completion (%)	Due from customers for contract work		Trade receivables (receivables from construction contract)	
				Gross amounts	Accumulated impairment losses	Gross amounts	Allowance for doubtful accounts
UAE BNPP #1,2 NSSS	Jun-30-10	Nov-18-22	98.00	₩ 2,680	9	-	-
Saeul #3, 4 NSSS	Aug-28-14	Mar-31-25	93.21	59,677	203	21,902	-
Shinhanul #1,2 NSSS	Jul-31-09	Apr-30-24	97.86	-	-	33,444	114
Samcheok #1,2 EPC	Jul-24-18	Apr-30-24	94.65	125,648	427	-	-
UAE BNPP #3,4 NSSS	Jun-30-10	Dec-31-24	97.30	-	-	6,905	23
Vinh Tan 4 TPP	Feb-26-14	Oct-31-21	99.66	20,105	68	24,817	4,963
Jawa #9, 10	Mar-20-19	Feb-15-25	93.47	141,915	483	94	20
Yanbu ph.3 MSF	Dec-4-12	Dec-31-22	99.98	-	-	10,786	1,043
Song Hau1	Apr-10-15	May-17-22	99.60	21,151	72	-	-
Nghi Son 2	Dec-24-14	Jul-10-22	99.43	-	-	-	-
UAE BNPP #3, 4 T/G	Sep-27-11	Dec-31-24	93.37	3,987	14	-	-
UAE BNPP #1, 2 T/G	Jun-30-10	Nov-18-22	99.62	1,232	5	-	-
Vinh Tan 4 Extension	Mar-10-16	Aug-31-21	99.79	-	-	5,870	1,174
Saeul #3, 4 main equipment construction	Jun-12-15	Sep-30-25	94.09	121,724	414	-	-
Suncheon Wangji 2	Apr-24-19	Sep-03-24	61.82	24,033	82	14,460	-
Saeul #1,2 main equipment construction	Mar-09-07	Dec-31-21	99.87	-	-	-	-
Van Phong 1	Aug-26-19	Dec-25-23	98.16	5,511	19	-	-
Gangneung Anin #1, 2 Boiler	Mar-31-15	Mar-15-23	95.99	-	-	-	-
Shoaiba RO Ph.4	Mar-29-17	May-23-23	96.13	34,280	117	31,536	-
Goseong Hai #1, 2 Boiler	Dec-27-16	Aug-30-22	99.55	-	-	-	-
Shinhanul #1, 2 T/G	Jun-23-09	Apr-30-24	99.73	-	-	-	-
Saeul #3, 4 T/G	Aug-28-14	Oct-31-25	94.82	9,982	34	-	-
Doha RO Stage-I	May-30-16	Dec-31-21	92.48	94	-	38,952	5,849
Muara Tawar Add-On	Mar-29-17	Mar-28-23	97.01	37,211	128	1,667	6
Al Khalij Boiler Package(*2)	Nov-01-08	Dec-31-18	98.83	39,473	134	-	-
Vogtle #3,4 AP1000	May-08-08	Dec-31-22	99.93	11,766	40	-	-

DOOSAN ENERBILITY CO., LTD.

Notes to the Separate Financial Statements, Continued

For the years ended December 31, 2023 and 2022

24. Revenue, Continued

(In millions of won)

	Contract date	Due date / Delivery date (*1)	Percentage-of- completion (%)		Due from customers for contract work		Trade receivables (receivables from construction contract)	
					Gross amounts	Accumulated impairment losses	Gross amounts	Allowance for doubtful accounts
Hanbit #3,4 RSG	Oct-31-14	Feb-28-23	100.00	₩	-	-	-	-
Tripoli West(*2)	Dec-23-10	Apr-30-15	57.25		-	-	-	-
Gimpo cogeneration powerblock EPC	Jun-17-20	Jul-30-23	99.79		-	-	-	-
Kudgi STPP	Oct-15-14	Dec-31-22	99.93		-	-	909	909
Yangsan Deokgye 3rd	Sep-05-20	Jun-30-24	66.36		3,015	10	-	-
IEC Orot Rabin FGD	Jun-30-10	May-18-23	98.43		-	-	343	165
Yanbu 4 IWP	Jan-22-21	Nov-01-23	89.41		-	-	-	-
Boryung 4 Eco-friendly equipment	Jun-23-20	Mar-15-23	99.04		-	-	4	-
Dangjin 1st phase # 1~4 storage tank	Jul-23-21	Dec-31-25	43.58		38,231	130	1,297	43
Vung Ang II Power Project	Oct-26-21	Oct-26-25	63.08		-	-	-	-
Nepal Upper Trishuli 1 HPP	Dec-31-21	Dec-31-26	24.35		-	-	48,423	3,640
Tuwaiq casting and forging project	Feb-20-22	Jan-15-25	53.04		-	-	32,116	-
Guam Ukudu CCPP	Dec-18-20	Sep-30-25	83.26		-	-	11,282	38
Shuaibah 3 IWP	Aug-19-22	May-20-25	36.08		-	-	-	-
El-Dabaa NPP	Nov-09-22	Apr-08-29	3.69		-	-	97,510	332
Jafurah Cogen Plant	Sep-09-22	Oct-15-25	45.44		62,626	213	19,802	67
Shin Hanul Unit 3 and 4 Reactor Facility	Mar-29-23	Oct-31-33	8.78		-	-	-	-
Turkistan CCGT	Mar-14-23	Aug-23-26	15.35		-	-	-	-
Shin Hanul Unit 3 and 4 Turbine Generator	Mar-20-23	Oct-31-33	19.39		-	-	-	-

(*1) Date being negotiated to extend contract period with respective contract party or due date/delivery date in contract.

(*2) Construction was temporarily suspended due to civil war in Libya and others.

(9) Customers accounting for 10% or more of the Company's revenue for the years ended December 31, 2023 and 2022 are as follows:

(In millions of won)

		2023	2022
Company group A	₩	1,862,759	1,498,658
Client B		820,304	328,800
Client C		333,813	657,399

25. Expenses classified by nature

Expenses (cost of sales, selling and administrative expenses) classified by nature for the years ended December 31, 2023 and 2022 are as follows:

<i>(In millions of won)</i>		2023	2022
Changes in inventories	₩	35,363	34,749
Purchases of raw materials and goods		2,378,372	2,072,523
Salaries		708,047	637,643
Depreciation and amortization		133,571	158,153
Others		2,941,651	2,296,066
Total	₩	<u>6,197,004</u>	<u>5,199,134</u>

26. Selling and administrative expenses

Selling and administrative expenses for the years ended December 31, 2023 and 2022 are as follows:

<i>(In millions of won)</i>		2023	2022
Salaries	₩	138,714	116,469
Post-Employment benefits		10,672	19,543
Termination benefits		821	61
Employee welfare benefits		22,013	17,389
Travel		5,905	4,209
Training		9,233	6,455
Taxes and dues		3,100	1,971
Commissions		75,712	66,269
Bad debt expenses		14,331	37,075
Depreciation		18,989	18,634
Amortization		6,574	14,825
Insurance		5,466	4,728
Research		26,425	24,513
Expansion expenses of overseas market		8,172	13,070
Advertising		26,760	27,203
Warranty		6,179	23,865
Provision for loss compensation		4,990	530
Others		10,332	21,167
Total	₩	<u>394,388</u>	<u>417,976</u>

27. Finance income and expenses

(1) Finance income for the years ended December 31, 2023 and 2022 are summarized as follows:

<i>(In millions of won)</i>		2023	2022
Interest income	₩	46,395	24,900
Dividend income		2,537	2,056
Gain on foreign currency transaction		188,260	210,337
Gain on foreign currency translation		34,039	61,273
Gain on settlement of derivative financial instruments		76,320	115,380
Gain on valuation of derivative financial instruments		66,182	90,160
Gain on valuation of firm commitments		43,958	67,459
Gain on financial guarantee		634	1,231
Total	₩	<u>458,325</u>	<u>572,796</u>

(2) Finance expenses for the years ended December 31, 2023 and 2022 are summarized as follows:

<i>(In millions of won)</i>		2023	2022
Interest expenses	₩	165,130	141,735
Loss on foreign currency transaction		197,039	253,362
Loss on foreign currency translation		26,641	110,952
Loss on settlement of derivative financial instruments		66,766	100,908
Loss on valuation of derivative financial instruments		83,812	96,296
Loss on valuation of firm commitments		27,139	54,102
Loss on financial guarantee		-	1,632
Commission expenses		29,005	45,719
Total	₩	<u>595,532</u>	<u>804,706</u>

28. Other non-operating income and expenses

(1) Other non-operating income for the years ended December 31, 2023 and 2022 are summarized as follows:

<i>(In millions of won)</i>		2023	2022
Commission income	₩	4,388	4,183
Gain on disposal of property, plant and equipment		1,332	1,539
Gain on valuation of long-term investment in securities		3,143	20,479
Reversal of impairment loss of assets held-for-sale		805	-
Gain on disposal of investment in subsidiaries		36,620	-
Gain on disposal of long-term investment in securities		94	1,802
Miscellaneous gain and others		23,857	86,548
Total	₩	<u>70,239</u>	<u>114,551</u>

(2) Other non-operating expenses for the years ended December 31, 2023 and 2022 are summarized as follows:

<i>(In millions of won)</i>		2023	2022
Commission fee	₩	16,980	34,573
Loss on disposal of trade receivables		27	2,886
Loss on disposal of property, plant and equipment		1,252	3,419
Donations		461	422
Impairment loss of property, plant and equipment		240	17,755
Impairment loss of intangible assets		157	64,682
Impairment loss of investment properties		37,837	-
Loss on valuation of short and long-term investment in securities		39,414	4,580
Impairment loss of investment in subsidiaries, associates and joint ventures		325,807	858,404
Loss on disposal of investment in subsidiaries		-	157,935
Loss on disposal on assets held-for-sale		2,295	-
Other bad debt expenses		145,083	129,601
Loss on valuation of greenhouse gas emission permits		939	-
Miscellaneous loss and others		52,097	14,180
Total	₩	<u>622,589</u>	<u>1,288,437</u>

29. Income tax benefit

(1) The component of income tax benefit for the years ended December 31, 2023 and 2022 are as follows:

<i>(In millions of won)</i>		2023	2022
Current income tax expense	₩	(7,876)	42,238
Tax effect of temporary difference		(81,668)	(165,730)
Total income tax benefit		(89,544)	(123,492)
Current income tax related to items recognized in equity during the year		(403)	(193)
Deferred tax related to items recognized in equity during the year		(40,507)	15,038
Others		(65)	-
Income tax benefit	₩	(130,519)	(108,647)

(2) The component of income tax expense and deferred tax related to items recognized in equity for the years ended December 31, 2023 and 2022 are as follows:

<i>(In millions of won)</i>		2023	2022
Loss (Gain) on revaluation of assets	₩	(60,257)	23,220
Loss (Gain) on valuation of FVOCI		138	(121)
Loss (Gain) on valuation of derivative financial instruments		2,919	(484)
Remeasurements of defined benefit liabilities		16,225	(7,763)
Others		65	(7)
Total	₩	(40,910)	14,845

(3) Changes in deferred tax assets (liabilities) for the years ended December 31, 2023 and 2022 are as follows:

<i>(In millions of won)</i>		2023	
	January 1	Change	December 31
Provision for retirement and severance benefits	₩ 80,420	18,020	98,440
Allowance for doubtful accounts	308,645	58,965	367,610
Property, plant and equipment	13,488	(1,518)	11,970
Development costs	18,398	(1,683)	16,715
Derivative financial instruments (including firm commitments)	(12,576)	16,450	3,874
Foreign currency denominated assets (liabilities)	11,537	(16,283)	(4,746)
Gain on revaluation of assets	(498,304)	(59,853)	(558,157)
Others	424,123	67,570	491,693
Total	₩ 345,731	81,668	427,399

29. Income tax benefit, Continued*(In millions of won)*

		2022	
		January 1	December 31
Provision for retirement and severance benefits	₩	83,506	80,420
Allowance for doubtful accounts		300,226	308,645
Property, plant and equipment		10,911	13,488
Development costs		22,827	18,398
Derivative financial instruments (including firm commitments)		29,804	(12,576)
Foreign currency denominated assets (liabilities)		4,843	11,537
Gain on revaluation of assets		(521,711)	(498,304)
Others		249,595	424,123
Total	₩	180,001	345,731

(4) The amount of deductible temporary differences for which no deferred tax asset is recognized in the statements of financial position as of December 31, 2023 and 2022 are as follows:

(In millions of won)

	2023	2022
Deductible temporary differences	₩ 2,816,564	2,955,806
Tax credit carried forward	29,681	30,612

The probability of deferred tax assets being realized depends on the Company's ability to generate taxable income in future years over which temporary differences are expected to reverse depending on the economic situation, industry forecast and other various factors. The Company periodically reviews such matters.

(5) Temporary differences related to investments in subsidiaries, associates and joint ventures which are not recognized as deferred tax asset as of December 31, 2023 and 2022 are as follows:

(In millions of won)

	2023	2022
Investments in subsidiaries and others	₩ 2,549,391	2,655,443

(6) Reconciliation of loss before income tax at the statutory tax rate to income tax benefit at the effective income tax rate of the Company for the years ended December 31, 2023 and 2022 are as follows:

(In millions of won)

	2023	2022
Loss before income tax	₩ (234,698)	(1,320,490)
Income tax benefit using statutory tax rate	(54,215)	(306,354)
Adjustments:		
Permanent differences	(52,303)	51,557
Unrecognized deferred tax related to temporary differences	61,959	170,504
Tax credit	(5,298)	-
Amount due to change in tax rate or regulations	5,350	28,721
Others	(86,012)	(53,075)
Income tax benefit	₩ (130,519)	(108,647)
Effective tax rate(*1)	-	-

(*1) Effective tax rate for the years ended December 31, 2023 and 2022 were not calculated due to loss before income tax.

29. Income tax benefit, Continued

(7) Pillar Two Model Rules

The Company adopted Pillar Two Model Rules (K-IFRS No. 1012 'Income Taxes') announced on May 23, 2023. The amendments include a mandatory temporary exception to the recognition and disclosure of deferred taxes arising from the Pillar Two Model Rules; and disclosure requirements of the Company's exposure to Pillar Two income taxes arising from that legislation. Exception regarding deferred taxes is applied retroactively.

The global minimum tax is a legislation in which if the effective tax rate of an entity of multinational group member (subsidiaries included in the consolidated financial statements) with sales of more than EUR 750 million in two or more of the previous four years is less than 15%, the equivalent is paid to the customs office of the country in which the parent company meets certain requirements. The Pillar Two Model Rules will be effective for the Company's fiscal year beginning on January 1, 2024.

Although the Company has potential exposure to Pillar Two Model Rules, there was no income tax expenses recognized in 2023, since the Pillar Two Model Rules legislation shall be effective from January 1, 2024. The Company has applied the mandatory exception to recognizing and disclosing information about deferred tax assets and liabilities arising from Pillar Two income taxes.

Since Pillar Two Model Rules legislation has not been enacted, or specific regulations are in progress in certain jurisdictions where the subsidiaries of the Company operate, quantitative information to indicate potential exposure to Pillar Two income taxes is currently not known or reasonably estimable. The Company and each subsidiary are currently assessing potential exposure of Pillar Two Model Rules with tax experts.

30. Loss per share**(1) Basic loss per share**

1) Basic loss per share for the years ended December 31, 2023 and 2022 are as follows:

<i>(In won, except for share)</i>	2023	2022
Loss for the period	₩ (104,179,311,411)	(1,211,843,374,713)
Weighted-average number of ordinary shares at the end of the period	639,928,125 shares	618,313,654 shares
Basic loss per share	₩ (163)	(1,960)

2) Weighted-average number of ordinary shares outstanding for the years ended December 31, 2023 and 2022 are as follows:

<i>(In shares)</i>	2023	2022
Issued ordinary shares at the beginning of the period (*1)	638,212,055	522,124,808
Issuance of ordinary shares	-	71,974,546
Exercise of bonds with stock warrants	-	24,214,300
Conversion of convertible bonds to common stock	1,716,070	-
Weighted-average number of ordinary shares at the end of the period	639,928,125	618,313,654

(*1) The number of shares is net of treasury stocks.

(2) Diluted loss per share

Details of potential ordinary shares that are potentially dilutive but were not included in the calculation of loss per share, as there were no dilutive effects for the years ended December 31, 2023 and 2022 are as follows:

<i>(In shares)</i>	2023	2022
Stock option (Mar 29, 2013)	-	14,565
Stock option (Mar 21, 2014)	5,851	5,851
Stock option (Mar 28, 2014)	14,900	20,800
Convertible bonds	-	2,253,113
Total	20,751	2,294,329

31. Commitments and contingencies

(1) Pledged check

As of December 31, 2023, 2 blank checks have been provided as collateral to Gyeonggi East-West Beltway Co. in relation to Bongdam-Songsan Expressway construction project.

(2) Financial commitments

- 1) As of December 31, 2023, the Company has credit lines of borrowings, bank overdrafts and other financial needs from financial institutions up to ₩3,358,212 million and used ₩2,548,589 million, leaving unused credit lines amounting to ₩809,623 million as of December 31, 2023.
- 2) As of December 31, 2023, the Company issued foreign currency-denominated bond of USD300,000 thousand. In accordance with the agreement for this bond, an early redemption clause exists for when the guarantor, KDB, is no longer controlled by Korean government. In addition, the Company has provided its 11,000,000 shares of Doosan Bobcat Inc. to lenders as collateral for the above bonds. If the total value of the shares provided is less than the collateral standard price, additional shares or deposits equivalent to the difference amounts should be provided.
- 3) As of December 31, 2023, the Company has provided 3,650,000 shares of Doosan Bobcat Inc. as collateral for loan facility of ₩100,000 million from SC Bank. In relation to the agreement, if the ratio does not meet the certain collateral limit predetermined in the agreement, either shares or deposits equivalent to the difference amounts must be provided as collateral or some loans must be redeemed early.
- 4) As of December 31, 2023, the Company has provided 8,500,000 shares of Doosan Bobcat Inc. and 20,780,229 shares of Doosan Fuel Cell Co., Ltd. as collateral for long-term borrowings of ₩500,000 million from NH Investment & Securities Co., Ltd. and others and 72nd privately placed bond of ₩100,000 million. In relation to the borrowings, if the ratio does not meet the certain collateral limit predetermined in the agreement, either shares or deposits equivalent to the difference amounts must be provided as collateral. In addition, if the Company receives a long-term credit rating of BB+ or lower or short-term credit rating of B+ or lower from one or more than one of the domestic credit rating agencies (Nice Investors Service Co., Ltd., Korea Investors Service, Inc. and Korea Ratings Corporation), an acceleration clause would be invoked for the immediate payment.
- 5) As of December 31, 2023, the 73rd public offering bond of ₩80,000 million and the 74th public offering bond of ₩80,000 million issued by the Company include the covenant requiring the Company to maintain a debt-to-equity ratio less than 700% and if the Company fails to meet the certain requirements, an acceleration clause would be invoked for immediate payment.

31. Commitments and contingencies, Continued

- 6) As of December 31, 2023, the Company has provided 2,800,000 shares of Doosan Bobcat Inc. as collateral for a loan facility of ~~₩~~80,000 million from Korea Securities Finance. According to the agreement, if the ratio does not meet the certain collateral limit predetermined in the agreement, either shares or deposits equivalent to the difference amounts must be provided as collateral or some loans must be redeemed early.
- 7) As of December 31, 2023, the Company has provided 2,000,000 shares of Doosan Fuel Cell Co., Ltd. as collateral for loan facility of ~~₩~~50,000 million from SC Bank. According to the agreement, if the ratio does not meet the certain collateral limit predetermined in the agreement, either shares or deposits equivalent to the difference amounts must be provided as collateral or some loans must be redeemed early.
- 8) As of December 31, 2023, the Company has provided 11,100,000 shares of Doosan Bobcat Inc. as collateral for long-term borrowings of ~~₩~~250,000 million from KDB and 3 other financial institution. In relation to the borrowings, if the ratio does not meet the certain collateral limit predetermined in the agreement, additional shares or deposits must be provided as collateral. In addition, in case the Company receives a long-term credit rating of BB0 or lower from two or more than two of the domestic credit rating agencies (Nice Investors Service Co., Ltd., Korea Investors Service, Inc. and Korea Ratings Corporation), it will trigger the financial institutions to collect the loans before the maturity.
- 9) As of December 31, 2023, the Company has provided 3,200,000 shares of Doosan Bobcat Inc. as collateral for short-term borrowings of ~~₩~~80,000 million from KDB and 2 other financial institution. In relation to the borrowings, if the ratio does not meet the certain collateral limit predetermined in the agreement, additional shares or deposits must be provided as collateral. In addition, in case the Company receives a long-term credit rating of BB0 or lower from two or more than two of the domestic credit rating agencies (Nice Investors Service Co., Ltd., Korea Investors Service, Inc. and Korea Ratings Corporation), it will trigger the financial institutions to collect the loans before the maturity.
- 10) As of December 31, 2023, in connection with the long-term borrowings of ~~₩~~143,000 million borrowed from SC Bank, if the Company does not meet the collection schedule and amount of a specific project provided to the bank, deposits equivalent to the difference amounts must be provided as collateral or some amount of the loan must be redeemed early.

31. Commitments and contingencies, Continued**(3) Pending litigations and others**

As of December 31, 2023, the Company is involved in pending lawsuits as a defendant with total claims against the Company amounting to approximately ₩53,812 million and the outcome is currently unpredictable.

(In millions of won)

	Claim amount
Litigation	₩ 53,812

(4) Technical contract

As of December 31, 2023, the Company has entered into 22 technical contracts with Mitsubishi Hitachi Power System, Ltd. and others, which have been effective from April 12, 2007 to September 4, 2035. For the years ended December 31, 2023 and 2022, royalty payments amounted to ₩4,394 million and ₩15,229 million, respectively.

DOOSAN ENERBILITY CO., LTD.

Notes to the Separate Financial Statements, Continued

For the years ended December 31, 2023 and 2022

31. Commitments and contingencies, Continued

(5) Project Financing Contingencies

1) Summary of contingencies related to real estate PF

As of December 31, 2023, the Company is providing a conditional debt assumption agreement of ₩459,262 million (Prior year: ₩385,417 million) for project financing loans, in case of violation of completion guarantees. Other business is solely operated by the Company, and , there is no credit enhancement provided to related parties within this business.

Among the contingencies disclosed as of December 31, 2022, ₩5,256 million was recognized as a provision during the current period (See Note 18).

As of December 31, 2023, summary of PF contingencies related to other business are as follows. The Company does not have PF contingencies related to maintenance business. :

(In millions of won)

		Balance of Loans									
		Guarantee Limit	Guarantee Amount	Maturity							2022
Type				2023	Less than 3 months	3-6 months	6-12 months	1-2 years	2-3 years	More than 3 years	
Other business	Bridge Loans	₩ -	-	-	-	-	-	-	-	-	-
	Main PF	591,890	459,262	353,278	-	-	32,578	253,300	67,400	-	296,475

DOOSAN ENERBILITY CO., LTD.

Notes to the Separate Financial Statements, Continued

For the years ended December 31, 2023 and 2022

31. Commitments and contingencies, Continued

2) PF payment guarantee (Real estate PF)

As of December 31, 2023, the Company is providing a conditional debt assumption agreement as follows for project financing loans, in case of violation of completion guarantees.

Some agreements related to PF guarantee include the acceleration clause amounting to ₩459,262 million (Prior year: ₩385,417 million). The acceleration clause activates when the borrower fails to pay the amount due under the financial contract, default occurs on the construction company or the borrower, or the construction company's credit rating falls, etc..

(In millions of won)

Location	Real Estate Type	PF Type	Type of Credit Enhancement	Guarantee Limit	Rate (%)	Guarantee Amount	Debtor	Related Party (Y/N)	Financial Institutions	Loan Balance		Loan Period	Maturity (Liquidation Securities)	Loan Type	Completion Guarantee Amount
										2023	2022				
Yangsan-si, Gyeongsangnam- do	Apartment	Main PF	Conditional debt assumption	₩ 70,590	100%	42,352	Kyungdong Smart Industry Co., Ltd and others	N	Comprehensive financial companies and others	32,578	44,875	2021.06.30 ~2024.09.30	2024.09.30	ABL	331,462
<p>Early redemption clause The borrower make early repayments before the maturity of the land trust, to the extent permitted by the lender in accordance with the Regulation on the business conduct and services of financial investment companies.</p> <p>The Company has entered into an agreement to lend repayment funds to borrowers, using construction receivables paid by Korea Asset Trust Co., Ltd., and is obligated to supplement the principal and interest of partial repayment if the repayment funds lent by the Company are less than the principal and interest of the loan agreement.</p>															
Suncheon-si, Jeollanam-do	Apartment	Main PF	Conditional debt assumption	292,500	100%	260,260	Eastern Urban Development Co., Ltd and others	N	Korean Federation of Community Credit Cooperatives and others	200,200	159,000	2021.05.04 ~2025.03.04	-	PF Loan	667,638
Seoul	Efficiency apartment	Main PF	Conditional debt assumption	143,000	100%	87,620	Ruby Limited	N	Korean Federation of Community Credit Cooperatives and others	67,400	54,000	2022.05.19 ~2026.02.19	-	PF Loan	49,820
<p>Early redemption clause The borrower make early repayments before the end of the land trust, to the extent permitted by the lender's regulations on the business conduct and services of financial investment companies.</p>															
Seoul	Knowledge Industry Center	Main PF	Conditional debt assumption	85,800	100%	69,030	T-Star Co., Ltd	N	Capital companies and others	53,100	38,600	2022.07.29 ~2025.11.29	-	PF Loan	34,848
<p>Early redemption clause The borrower make early repayments to the extent permitted by the lender permits in accordance with the management land trust.</p>															
Total				₩ 591,890		459,262				353,278	296,475				1,083,768

DOOSAN ENERBILITY CO., LTD.

Notes to the Separate Financial Statements, Continued

For the years ended December 31, 2023 and 2022

31. Commitments and contingencies, Continued

3) Completion guarantees (Real estate PF)

As of December 31, 2023, the Company is providing a conditional debt assumption agreement as follows for other business, in case of violation of completion guarantees. The Company does not have completion guarantees related to maintenance business.

(In number, millions of won)

	2023				2022			
	Number of Construction projects	Guarantee Limit	Guarantee Amount	Loan Balance	Number of Construction projects	Guarantee Limit	Guarantee Amount	Loan Balance
Other business	4	₩ 1,083,768	1,083,768	353,278	4	1,001,623	1,001,623	296,475

4) SOC guarantees (Real estate PF)

In the event that the early termination due to reasons attributable to the project operator, if the payment received by the SOC corporation is less than the sum of all liabilities of the SOC corporation and the investment funds of financial investors, the Company has an obligation to jointly provide the equivalent amount of the shortfall according to the mandatory sharing ratio, at the request of the creditor representative bank(see Note 18).

5) Intermediate payment loan guarantee in relation to main PF

As of December 31, 2023, the Company is providing guarantees for intermediate payment loan of the buyers amounting to ₩104,543 million (Prior year: ₩ 52,216 million). Other businesses is solely operated by the Company, and the Company does not have intermediate payment loan guarantee related to maintenance business.

(In number, millions of won)

	2023				2022			
	Number of Construction projects	Guarantee Limit	Guarantee Amount	Loan Balance	Number of Construction projects	Guarantee Limit	Guarantee Amount	Loan Balance
Other business	3	₩ 282,084	104,543	460,572	2	185,004	52,216	232,551

DOOSAN ENERBILITY CO., LTD.

Notes to the Separate Financial Statements, Continued

For the years ended December 31, 2023 and 2022

31. Commitments and contingencies, Continued

(6) Non-PF guarantee contracts

1) Summary

As of December 31, 2023, the Company is providing guarantees including contract performance and defect guarantees amounting to ₩2,182,306 million (Prior year: ₩2,354,609 million) by subscribing to insurance companies or issuing guarantee certificates, etc. as follows.

(In millions of won)	Guarantee	Type	Guarantee	Guarantee	Beneficiary	Related
			Limit	Amount		Party (Y/N)
Received Guarantee	Doosan Water UK Ltd. and others	Construction Guarantee and others	₩ 2,443,937	2,177,064	Northumbrian Water and others	Y
	Altrad Babcock General Maintenance Services LLC and others	Construction Guarantee	5,242	5,242	Construction Industry Guarantee	N
		Subtotal	2,449,179	2,182,306		
Provided Guarantee	Doosan Enerbility Co., Ltd.	Construction Guarantee and others	13,546,834	9,827,952	Hana Bank and others	N
		Total	₩ 15,996,013	12,010,258		

DOOSAN ENERBILITY CO., LTD.
Notes to the Separate Financial Statements, Continued
For the years ended December 31, 2023 and 2022

31. Commitments and contingencies, Continued

2) Guarantees of payment provided to the related party

As of December 31, 2023, details of payment guarantees provided by the Company for the related parties are as follows:

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

Related Party	Guarantee	Type	Currency	Foreign Currency		Local Currency		Beneficiary
				Guarantee Limit	Guarantee Amount	Guarantee Limit	Guarantee Amount	
Subsidiaries	Doosan Water UK Ltd.	Construction Guarantee	GBP	51,763	51,763	₩ 84,984	84,984	Northumbrian Water and others
	Doosan Power Systems S.A.	Debt Guarantee	GBP	21,738	9,115	35,689	14,965	Woori Bank and others
		Others (*1)	GBP	21,000	21,000	34,478	34,478	Corum XL
	DPS S.A. and DPS UK Pension Company Ltd.	Others (*2)	GBP	85,000	85,000	139,552	139,552	DPS Pension Trustee Company Ltd.
	Doosan GridTech Inc.	Construction Guarantee	USD	75,375	75,375	97,189	97,189	Construction Guarantee cooperative and others
		Construction Guarantee	AUD	149,940	149,940	131,960	131,960	Wandoan BESS Project Co Pty Ltd and others
	Doosan Enerbility America LLC	Debt Guarantee	USD	4,000	2,000	5,158	2,579	Woori Bank
	PT. Doosan Heavy Industries Indonesia	Construction Guarantee	IDR	997,545,695	997,545,695	83,395	83,395	Construction Guarantee cooperative and others
	Doosan Enerbility Japan Corp.	Debt Guarantee	JPY	220,000	220,000	2,008	2,008	KDB
	Doosan Heavy Industries Muscat LLC	Construction Guarantee	USD	142,523	142,523	183,769	183,769	AL ASILAH DESALINATION COMPANY S.A.O.C and others
	Doosan Enerbility Vietnam Co., Ltd.	Debt Guarantee	USD	103,611	43,789	133,596	56,462	SC Bank and others
		Construction Guarantee	VND	1,026,306,240	1,026,306,240	54,599	54,599	Construction Guarantee cooperative
		Debt Guarantee	VND	1,120,000,000	294,101,361	59,584	15,646	Techcom Bank and others
	Doosan Lentjes GmbH	Construction Guarantee	EUR	245,142	245,142	349,717	349,717	Construction Guarantee cooperative and others
		Debt Guarantee	EUR	29,000	28,995	41,371	41,364	SC Bank
	Doosan Power Systems Arabia Company Limited	Debt Guarantee	SAR	20,000	5,020	6,877	1,726	SABB
		Construction Guarantee	SAR	6,000	6,000	2,063	2,063	Construction Industry Guarantee
	Doosan Power Systems India Private Ltd.	Construction Guarantee	EUR	9,479	9,479	13,522	13,522	Axis Bank and others
		Construction Guarantee	INR	42,754,215	42,754,215	662,690	662,690	Construction Guarantee cooperative and others
		Debt Guarantee	INR	2,853,333	1,855,000	44,227	28,753	SC Bank and others
		Construction Guarantee	JPY	219,640	219,640	2,005	2,005	Seoul guarantee insurance and others
	Doosan Ukudu Power, LLC	Construction Guarantee	USD	76,518	76,518	98,662	98,662	Construction Guarantee cooperative and others
		Construction Guarantee	USD	49,956	49,956	64,413	64,413	Construction Guarantee cooperative
	Subtotal					₩ 2,331,508	2,166,501	

DOOSAN ENERBILITY CO., LTD.

Notes to the Separate Financial Statements, Continued

For the years ended December 31, 2023 and 2022

31. Commitments and contingencies, Continued

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

Related Party	Guarantee	Type	Currency	Foreign Currency		Local Currency		Beneficiary
				Guarantee Limit	Guarantee Amount	Guarantee Limit	Guarantee Amount	
Associates	Doosan Engineering & Construction Co., Ltd.	Construction Guarantee	EUR	7,404	7,404	₩ 10,563	10,563	Korea EXIM Bank
	Tuwaiq Casting & Forging Company	Debt Guarantee	SAR	296,250	-	101,866	-	KDB
	Subtotal					112,429	10,563	
	Total					₩ 2,443,937	2,177,064	

(*1) DPS S.A. is obligated to lease the office building in use until September 2033, and the Company provides payment guarantees in relation to the lease.

(*2) The Company provides payment guarantee for DPS UK Pension Company Ltd. regarding monthly pension payment obligations and total pension payments to guarantee creditors in case of bankruptcy.

3) Guarantees of payment provided to the third parties

As of December 31, 2023, details of guarantees provided by the Company for the third parties are as follows:

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

Guarantee	Type	Currency	Foreign Currency		Local Currency		Beneficiary
			Guarantee Limit	Guarantee Amount	Guarantee Limit	Guarantee Amount	
Altrad Babcock General Maintenance Services LLC.	Construction Guarantee	AED	7,068	7,068	₩ 2,481	2,481	Construction Industry Guarantee
Doosan Babcock W.L.L	Construction Guarantee	QAR	7,800	7,800	2,761	2,761	Construction Industry Guarantee
Total					₩ 5,242	5,242	

DOOSAN ENERBILITY CO., LTD.
Notes to the Separate Financial Statements, Continued
For the years ended December 31, 2023 and 2022

31. Commitments and contingencies, Continued

4) Guarantees of payment provided by third parties

As of December 31, 2023, details of payment guarantees provided by third parties are as follows:

(In millions of won)

Beneficiary	Type	Guarantee Limit	Guarantee Amount	Related Party (Y/N)
Hana Bank	Construction Guarantee	₩ 113,844	23,159	N
Korea EXIM Bank	Construction Guarantee	210,966	210,966	N
Korea Trade Insurance Corporation	Construction Guarantee	412,608	73,562	N
Woori Bank	Construction Guarantee	84,198	68,799	N
Construction Industry Guarantee (*1)	Construction Guarantee	1,288,127	1,118,864	N
Construction Guarantee cooperative (*1)	Construction Guarantee	6,580,318	4,143,283	N
Seoul Guarantee Insurance	Construction Guarantee	318,860	318,860	N
Machinery Financia Cooperative	Construction Guarantee	2,610,380	2,320,306	N
Engineering Mutual Aid Association (*1)	Construction Guarantee	646,145	449,388	N
Korea Federation of Small and Medium Businesses	Construction Guarantee	20,000	14,171	N
KDB and others	Debt Guarantee	450,645	450,645	N
Others	Construction Guarantee	810,743	635,949	N
		₩ 13,546,834	9,827,952	

(*1) The guaranteed limit was calculated by inverse calculation of the weighted amount, and the guarantee balance is based on the actual amount issued.

31. Commitments and contingencies, Continued

(7) Other commitments and contingencies

- 1) The Company signed a new lease contract with BUNDANG DOOSAN TOWER REIT Co., Ltd. for 5 years on January 8, 2021 in conjunction with Doosan Corp., Doosan Bobcat Korea Co., Ltd. and HD Hyundai Infracore Co., Ltd.. As HD Hyundai Infracore Co., Ltd. withdrew from the lease agreement on December 31, 2022, the Company took over the related status and rights and obligations. In accordance with above contracts, the Company jointly has lease obligations. If certain condition of the lease contract is not met, the contract will be extended once for 5 years under the same conditions.

In addition, the sublease of the real estate is jointly performed by parties including the Company, Doosan Corp. and Doosan Bobcat Korea Co., Ltd. and each party has the right to the rental income to the extent applicable excluding the self-lease and related expenses.

- 2) The Company accounts for the above-mentioned 1) joint lease contract as joint operation in which the parties jointly control the lease arrangement also have the right to assets and liabilities of the leased asset in accordance to K-IFRS No. 1111 'Joint Arrangements.' As of December 31, 2023, the Company's participating rate is 83.6%.
- 3) As of December 31, 2023, the Company is an investor of Samcheok Blue Power Co., Ltd. which is responsible for the EPC construction project of Samcheok #1, 2 TPP, and obligated to make an additional investment of ~~₩~~77,740 million before the completion of the comprehensive construction in accordance with the investor agreement.
- 4) During 2019, the Company sold the Doosan R&D center located in Seongbokdong, Sujigu, Yongin, Gyeonggi-do and has lease obligations for five years after the sale.
- 5) The Company compensates for the shortfall to the extent of the recoverable amount from Doosan Engineering & Construction Co., Ltd. stock (ownership 46.35%) if final distribution amount of the sales price of Doosan Engineering & Construction Co., Ltd. stock (ownership 53.65%) held by The Zenith Holdings Ltd. has not met the investment capital of the investors (excluding 2018 QCP No. 13 Private Equity Joint venture, the representative PEF).
- 6) The Company has agreed to invest a total of ~~₩~~18,525 million in Multi-asset ESG Marine Wind Power Private Equity Fund 1st, and the remaining investment agreement commitment amount is ~~₩~~8,029 million. As of December 31, 2023, the Company decided to sell all of its shares and classified the shares as assets held-for-sale (See Note 35).

32. Assets pledged as collateral

- (1) As of December 31, 2023, assets that have been pledged as collateral for the Company's borrowings and others are as follows:

(In millions of won)

Collateralized asset	Collateralized amount	Amount of borrowings and others	Pledgee
Land, buildings, equipment and others (*1)	₩ 1,082,924	747,441	KDB, Korea EXIM Bank, SC Bank
Ordinary shares of Doosan Bobcat Inc. and others (*1)	2,349,415	1,366,820	KDB and others
Ordinary shares of Doosan Engineering & Construction Co., Ltd. (*2)	201,230	200,567	Woori Bank
Equity shares of Construction Guarantee Cooperative and others (*3)	113,871	69,913	Construction Guarantee Cooperative and others
Total	₩ 3,747,440	2,384,741	

- (*1) As of December 31, 2023, in accordance with bond, borrowing, and borrowing covenant held by the Company, 40,250,000 shares of Doosan Bobcat Inc., a subsidiary of the Company, and 22,780,229 shares of Doosan Fuel Cell Co., Ltd., a subsidiary of the Company, land and others have been provided as collateral (See Note 31).
- (*2) As of December 31, 2023, in relation to guarantee payment of the Company, 50,000,000 shares of Doosan Engineering & Construction Co., Ltd., an associate of the Company, have been provided as collateral.
- (*3) As of December 31, 2023, in relation to the company's debts, 53,159 shares of Construction Guarantee Cooperative, 8,767 shares of Engineering Guarantee Insurance, 14,657 shares of CI Guarantee, 35,000 shares of Machinery Financial Cooperative, 800 shares of Electric Contractors' Financial Cooperative and others are provided as collateral.
- (2) As of December 31, 2023, among the long-term investment in securities of the Company, the shares of Gyeonggi East-West Beltway Co. with the book value of ₩1,221 million have been provided as collateral for the project financing of the entity and established the right of pledge to Nonghyup Bank and others (PF syndicate).

Meanwhile, as of December 31, 2023, the Company has entered into a contract of completion guarantee regarding the Changwon hydrogen liquefaction plant and provided 1,400,000 shares of Hychangwon Co., Ltd. with the book value of ₩7,000 million as collateral for the project financing of the entity and established the right of pledge to Industrial Bank of Korea (PF syndicate).

- (3) As of December 31, 2023, the Company has entered into a contract of completion guarantee regarding the EPC construction project of Samcheok #1,2 TPP and provided 1,193,066 shares (the book value of ₩43,568 million) of Samcheok Blue Power Co., Ltd. as collateral.

As of December 31, 2023, the Company has signed the export bond insurance limit contract (₩459,000 million) with Korea Trade Insurance Corporation and provided part of the land, buildings, and machinery of the Changwon Plant (Collateralized amount: ₩420,000 million) and all shares of DPS S.A. held by the Company (Collateralized amount: GBP 293 million) as collateral.

- (4) As of December 31, 2023, the Company has provided ₩6,041 million of deposits to Korea Securities Finance Corp. as collateral regarding supplement member loan for stock acquisition of Employee Stock Ownership Association.

32. Assets pledged as collateral, Continued

- (5) As of December 31, 2023, the Company is providing construction receivables as collateral to lenders amounting to ₩32,578 million (Collateralized amount: ₩42,352 million), out of ₩54,300 million in loan agreement excluding ₩21,722 million paid, in connection with the new construction of the 3rd apartment units in Yangsan Deokgye, 5th apartment units in Yangsan Deokgye.

DOOSAN ENERBILITY CO., LTD.

Notes to the Separate Financial Statements, Continued

For the years ended December 31, 2023 and 2022

33. Related party transactions

(1) The related parties of the Company and nature of their relationship with the Company as of December 31, 2023 and 2022 are as follows:

1) As of December 31, 2023, the Company's ultimate parent company is Doosan Corp. (equity ownership: 30.40%).

2) As of December 31, 2023 and 2022, the details of the Company's subsidiaries are as follows:

Related party	Equity ownership (%)(*1)	
	2023	2022
Doosan Enerbility Vietnam Co., Ltd.	100.00	100.00
Doosan HF Controls Corp.	100.00	100.00
Doosan HF Controls Asia Co., Ltd.	100.00	100.00
PT. Doosan Heavy Industries Indonesia	83.64	83.64
Doosan Heavy Industries Malaysia Sdn. Bhd	100.00	100.00
Doosan Enerbility Japan Corp.	100.00	100.00
Doosan Water UK Ltd.	100.00	100.00
Doosan Power Systems India Private Ltd.	100.00	100.00
Doosan Heavy Industries Muscat LLC	70.00	70.00
Doosan Power Systems Arabia Company Limited	51.00	51.00
Azul Torre Construction Corporation	40.00	40.00
Doosan Enerbility America Holdings Inc.	100.00	100.00
Doosan Enerbility America LLC	100.00	100.00
Doosan ATS America, LLC	100.00	100.00
Doosan Power Service America, LLC	100.00	100.00
Doosan Turbomachinery Services Holding, Inc.	100.00	100.00
Doosan Turbomachinery Services Inc.	100.00	100.00
Doosan GridTech Inc.	100.00	100.00
Doosan GridTech LLC	100.00	100.00
Doosan GridTech CA LLC	100.00	100.00
Doosan GridTech EPC LLC	100.00	100.00
Doosan GridTech C&I LLC	100.00	100.00
Continuity Energy LLC	100.00	100.00
Doosan Skoda Power s.r.o	100.00	100.00
Skoda Power Private Ltd.	100.00	100.00
DPS UK Pension Company Ltd.	100.00	100.00
Doosan Power Systems Pension Trustee Co., Ltd.	100.00	100.00
Doosan Lentjes GmbH	100.00	100.00
DPS S.A.	100.00	100.00
Doosan Lentjes Czech s.r.o	100.00	100.00
Doosan Ukudu Power, LLC	100.00	100.00
Osung Power O&M Co., Ltd.	100.00	100.00
Doosan Cuvex Co., Ltd.	100.00	100.00
Doosan Bobcat Inc. and the subsidiaries	46.11	51.07
Doosan Fuel Cell Co., Ltd.	30.33	30.33
D20 Capital, LLC and the subsidiaries	100.00	100.00
Doosan Recycle Solution Co., Ltd. (*2)	100.00	-
Doosan Geosolution Co., Ltd. (*2)	100.00	-

(*1) The ownership represents addition of the investment owned by the Company and its subsidiaries.

(*2) Newly established during 2023.

DOOSAN ENERBILITY CO., LTD.

Notes to the Separate Financial Statements, Continued

For the years ended December 31, 2023 and 2022

33. Related party transactions, Continued

3) The associates and joint ventures and other related parties of the Company and nature of their relationship with the Company as of December 31, 2023 are as follows:

Control relationship	Related party
Associates and joint ventures	Samcheok Blue Power Co., Ltd., Daejung Offshore Wind Power Co., Ltd., Hychangwon Co., Ltd., The Zenith Holdings Ltd., Doosan Engineering & Construction Co., Ltd. and the subsidiaries, Tuwaiq Casting & Forging Company, Multi-asset ESG Marine Wind Power Private Equity Fund 1 st (*6), BUNDANG DOOSAN TOWER REIT Co., Ltd. (*1)
Related parties:	
Subsidiaries of the parent company	Oricom Inc., Hancom Co., Ltd., Doosan Bears Inc., Doosan Business Research Institute, Doosan Robotics Co., Ltd., Doosan Mobility Innovation Co., Ltd., Doosan Logistics Solutions Co., Ltd, DPAY 2 nd Co., Ltd., Doosan 2 nd Real Estate Securitization Specialty Co., Ltd., Doosan Mobility Innovation (Shen Zhen) Co., Ltd., Doosan Electro-Materials Singapore Pte. Ltd., Doosan Hongkong Ltd., Doosan Electro-Materials (Shen Zhen) Limited., Doosan Shanghai Chemical Materials Co., Ltd., Doosan Electro-Materials (Changshu) Co., Ltd., Doosan Digital Innovation America LLC., Doosan Digital Innovation China LLC, Doosan Digital Innovation Europe Limited, Doosan Electro-Materials America, LLC, HyAxiom, Inc., Doosan Energy Solutions America, Inc., DESA Service, LLC, Doosan Electro-Materials Vietnam Company Limited, Doosan H2 Innovation Co., Ltd., Doosan Portfolio Holdings Co., Ltd. (*3), D-Pay 3 rd Co., Ltd., Doosan Tesna Inc., HyAxiom Motors Co., Ltd., NewstarBears Co., Ltd., Doosan Robotics Americas, LLC, Doosan Investment Co., Ltd. (*4) and others
Associates and joint ventures of the parent company (*5)	KDDI Korea Corporation, Sichuan Kelun-Doosan Biotechnology Company Limited, PT. SEGARA AKASA, Mastern Professional Investment Type Private Security Investment Trust No.98, Semi Five Co., Ltd. (*2) and others
Others (*7)	Doosan Credit Union, Doosan Yonkang Foundation, Chung-Ang University, Chung-Ang University Hospital, Prestolite Asia Ltd., Daesan Green Energy Co., Ltd., Ainstein AI, Inc, Folletto Robotics Co., Ltd., Won Sang Co., Ltd., The Weve Holdings Ltd., Protera SAS, and others

(*1) In 2023, the entity is reclassified from the other related party to associates, since the Company received the shares of the entity as dividends in-kind from Doosan Cuvex Co., Ltd., a subsidiary.

(*2) In 2023, the entity is classified as other related party.

(*3) In 2023, the entity has changed its name from Doosan Investment Co., Ltd. to Doosan Portfolio Holdings Co., Ltd..

(*4) Newly established during 2023.

(*5) Wise-fashion Co., Ltd., SiO2 Medical Products, and Versogen Inc. are excluded from the scope of the related party.

(*6) In 2023, the entity is reclassified to assets held-for-sale (See Note 35).

(*7) In 2023, Stathera IP Holding Inc. is excluded from the scope of the related party.

DOOSAN ENERBILITY CO., LTD.
Notes to the Separate Financial Statements, Continued
For the years ended December 31, 2023 and 2022
33. Related party transactions, Continued
(2) Significant transactions between the Company and related parties

Significant transactions (excluding financial and investment) with related parties for the years ended December 31, 2023 and 2022 are as follows:

(In millions of won)

Related party	2023			
	Sales and others		Purchases and others	
	Sales (*1)	Other revenue	Purchase	Other expense
Parent:				
Doosan Corp.	₩ -	305	33,341	39,946
Subsidiaries:				
Doosan Cuvex Co., Ltd.	45,996	20	11,358	494
Osung Power O&M Co., Ltd.	702	4	5,570	-
Doosan Power Systems Arabia Company Limited	-	516	13,110	-
Doosan Power Systems India Private Ltd.	10,000	6,852	4,457	-
Doosan Enerbility Vietnam Co., Ltd.	131,585	311	395,579	-
Doosan ATS America, LLC	-	-	3,035	-
Doosan Turbomachinery Services	2,100	-	3,577	-
Doosan Skoda Power s.r.o	63	-	11,005	-
DPS S.A.	-	6,287	-	-
Doosan Bobcat Inc.	75,323	-	-	-
Doosan HF Controls Corp.	-	-	3,809	-
Doosan Lentjes GmbH	-	850	3,638	-
Others	1,084	2,844	5,809	362
Subtotal	266,853	17,684	460,947	856
Associates and joint ventures:				
Samcheok Blue Power Co., Ltd.	264,301	-	-	-
Hychangwon Co., Ltd.	11,865	-	-	-
Tuwaiq Casting & Forging Company	440,863	-	-	-
BUNDANG DOOSAN TOWER REIT Co., Ltd.	-	1,724	-	17,512
Others	-	120	132	1,447
Subtotal	717,029	1,844	132	18,959
Others:				
Oricom Inc.	-	1	584	10,393
Doosan Bears Inc.	-	-	530	10,007
Doosan Business Research Institute	313	25	-	9,251
Others	-	167	912	277
Subtotal	313	193	2,026	29,928
Total	₩ 984,195	20,026	496,446	89,689

(*1) Includes ₩253,581 million of dividend income from Doosan Bobcat Inc., a subsidiary of the Company, and others.

DOOSAN ENERBILITY CO., LTD.
Notes to the Separate Financial Statements, Continued
For the years ended December 31, 2023 and 2022
33. Related party transactions, Continued
(In millions of won)

Related party	2022				
	Sales and others		Purchases and others		
	Sales	Other revenue	Purchase	Acquisition of PP&E and intangible assets	Other expense
Parent:					
Doosan Corp.	₩ -	308	24,778	-	41,351
Subsidiaries:					
Doosan Cuvex Co., Ltd.	23	19	10,766	-	527
Osung Power O&M Co., Ltd. (*1)	1,002	4	5,207	-	-
KDPP 5 th Co., Ltd. (*4)	-	-	-	-	1,382
Doosan Power Systems Arabia Company Limited	-	343	11,349	-	-
Doosan Power Systems India Private Ltd.	15,452	5,603	-	-	-
Doosan Lentjes GmbH	-	461	5,159	-	-
Doosan Enerbility Vietnam Co., Ltd.	8	1,015	255,567	-	-
Doosan ATS America, LLC	-	-	3,808	-	-
Doosan Babcock Ltd. (*2)	-	3,674	870	4,015	-
Doosan Skoda Power s.r.o	127	-	6,439	-	-
DPS S.A.	-	10,302	-	-	-
Doosan Bobcat Inc. (*1)	92,117	-	-	-	-
D20 Capital, LLC (*1)	19,190	-	-	-	-
Others	883	1,817	12,181	-	1,157
Subtotal	128,802	23,238	311,346	4,015	3,066
Associates and joint ventures:					
Doosan Engineering & Construction Co., Ltd.	-	133	35	101	1,329
Samcheok Blue Power Co., Ltd.	416,708	-	-	-	-
The HS-City Expressway (*3)	9	-	-	-	-
Hychangwon Co., Ltd.	53,696	-	-	-	-
Tuwaiq Casting & Forging Company	137,852	-	-	-	-
Subtotal	608,265	133	35	101	1,329
Others:					
Oricom Inc.	-	-	46	-	10,905
Doosan Bears Inc.	-	-	505	-	10,006
Doosan Business Research Institute	305	20	-	-	7,120
BUNDANG DOOSAN TOWER REIT Co., Ltd.	-	-	-	-	16,801
Others	-	1	880	-	378
Subtotal	305	21	1,431	-	45,210
Total	₩ 737,372	23,700	337,590	4,116	90,956

(*1) Includes ₩ 112,307 million of dividend income from Doosan Bobcat Inc., a subsidiary of the Company, and others.

(*2) Includes transactions before the sale of Doosan Babcock Ltd.

(*3) Includes transactions before the sale of The HS-City Expressway.

(*4) Includes transactions before the loss of control over KDPP 5th Co., Ltd.

DOOSAN ENERBILITY CO., LTD.
Notes to the Separate Financial Statements, Continued
For the years ended December 31, 2023 and 2022
33. Related party transactions, Continued
(3) Significant balances related to the transactions between the Company and related parties

The outstanding receivables and payables arising from the transactions with related parties (excluding dividend and investment) as of December 31, 2023 and 2022 are as follows:

(In millions of won)

Related party	2023					
	Receivables			Payables		
	Trade receivables	Loans receivables	Other receivables	Trade payables	Other payables	Lease liabilities
Parent:						
Doosan Corp.	₩ -	-	691	17,640	1,933	-
Subsidiaries:						
Doosan Cuvox Co., Ltd.	-	-	5,333	633	26	-
Doosan Enerbility Vietnam Co., Ltd.	-	-	4,888	217,039	24,248	-
Doosan Enerbility America LLC	9	-	25,424	5,795	212	-
Doosan Heavy Industries Muscat LLC (*1)	18,696	-	4,992	-	4,850	-
Doosan Power Systems India Private Ltd. (*2)	226,961	129,220	119,507	1,352	136	-
Doosan Water UK Ltd. (*3)	4,175	37,761	4,990	17	-	-
Azul Torre Construction Corporation (*4)	-	3,701	5,073	-	-	-
Doosan Lentjes GmbH	-	37,091	7,686	6,907	-	-
DPS S.A.	-	63,209	46,853	6,916	-	-
Doosan Skoda Power s.r.o	-	-	10,401	5,211	29	-
Doosan GridTech Inc.(*5)	-	6,447	48,981	-	-	-
Doosan Power Systems Arabia Company Limited	-	10,315	1,576	5,975	-	-
Others	8	-	4,556	2,962	1,058	-
Subtotal	249,849	287,744	290,260	252,807	30,559	-
Associates:						
Samcheok Blue Power Co., Ltd. (*6)	-	-	125,648	-	-	-
Doosan Engineering & Construction Co., Ltd.	-	-	22,242	122	20,927	-
Hychangwon Co., Ltd.	5,500	-	47	-	1,992	-
Tuwaiq Casting & Forging Company (*7)	32,116	-	119	-	248,551	-
BUNDANG DOOSAN TOWER REIT Co., Ltd.	-	-	23,406	-	-	139,881
Subtotal	37,616	-	171,462	122	271,470	139,881
Related Parties:						
Oricom Inc.	-	-	2	3,155	-	-
Others	-	-	31	951	13	-
Subtotal	-	-	33	4,106	13	-
Total	₩ 287,465	287,744	462,446	274,675	303,975	139,881

33. Related party transactions, Continued

- (*1) As of December 31, 2023, the Company has set an allowance for doubtful accounts of ~~₩~~20,747 million for receivables of Doosan Heavy Industries Muscat LLC and the ~~₩~~152 million was recognized as bad debt expenses in 2023.
- (*2) As of December 31, 2023, the Company has set an allowance for doubtful accounts of ~~₩~~475,688 million for receivables of Doosan Power Systems India Private Ltd., and the ~~₩~~ 29,422 million was recognized as bad debt expenses in 2023.
- (*3) As of December 31, 2023, the Company has set an allowance for doubtful accounts of ~~₩~~46,926 million for receivables of Doosan Water UK Ltd. and the ~~₩~~4,773 million was recognized as bad debt expenses in 2023. The Company recognized provision of ~~₩~~18,060 for guarantees to the related party (See Note 31).
- (*4) As of December 31, 2023, the Company has set an allowance for doubtful accounts of ~~₩~~8,774 million for receivables of Azul Torre Construction Corporation and the ~~₩~~ 164 million was recognized as bad debt expenses in 2023.
- (*5) As of December 31, 2023, the Company has set an allowance for doubtful accounts of ~~₩~~55,428 million for receivables of Doosan GridTech Inc. and the ~~₩~~55,428 million was recognized as bad debt expenses in 2023.
- (*6) As of December 31, 2023, the Company has set an allowance for doubtful accounts of ~~₩~~ 427 million for receivables of Samcheok Blue Power Co., Ltd. and the ~~₩~~ 339 million was recognized as reversal of allowance for doubtful accounts in 2023.
- (*7) As of December 31, 2023, the Company has set an allowance for doubtful accounts of ~~₩~~ 3 million for receivables of Tuwaiq Casting & Forging Company and the ~~₩~~ 247 million was recognized as reversal of allowance for doubtful accounts in 2023.

DOOSAN ENERBILITY CO., LTD.
Notes to the Separate Financial Statements, Continued
For the years ended December 31, 2023 and 2022
33. Related party transactions, Continued
(In millions of won)

Related party	2022					
	Receivables			Payables		
	Trade receivables	Loans receivables	Other receivables	Trade payables	Other payables	Lease liabilities
Parent:						
Doosan Corp.	₩ -	-	681	11,431	2,184	-
Subsidiaries:						
Doosan Cuvex Co., Ltd.	-	-	5,343	616	26	-
Doosan Enerbility Vietnam Co., Ltd.	-	-	11,102	203,482	30,511	-
Doosan Enerbility America LLC	-	-	30	6,753	-	-
Doosan Enerbility Japan Corp.	-	-	163	3,040	321	-
Doosan Heavy Industries Muscat LLC(*5)	26,722	-	4,528	-	5,919	-
Doosan Power Systems India Private Ltd.(*1)	218,940	127,636	99,690	1	689	-
Doosan Water UK Ltd.(*2)	4,103	35,136	2,914	16	-	-
Azul Torre Construction Corporation(*3)	-	3,623	4,987	-	-	-
DPS S.A.	-	272,431	36,179	7,445	-	-
Doosan Skoda Power s.r.o	-	-	225	7,599	-	-
Doosan GridTech Inc.	-	6,337	29,920	-	-	-
Doosan Power Systems Arabia Company Limited	-	10,138	974	1,384	-	-
Others	-	-	4,727	10,063	-	-
Subtotal	249,765	455,301	200,782	240,399	37,466	-
Associates:						
Samcheok Blue Power Co., Ltd.(*4)	-	-	99,581	-	-	-
Doosan Engineering & Construction Co., Ltd.	-	-	11,422	122	9,757	-
Hychangwon Co., Ltd.	4,070	-	-	-	9,312	-
Tuwaiq Casting & Forging Company(*6)	32,430	-	-	-	201,223	-
Subtotal	36,500	-	111,003	122	220,292	-
Related Parties:						
Oricom Inc.	-	-	-	1,944	-	-
BUNDANG DOOSAN TOWER REIT Co., Ltd.	-	-	17,499	-	-	154,164
Others	-	-	30	849	15	-
Subtotal	-	-	17,529	2,793	15	154,164
Total	₩ 286,265	455,301	329,995	254,745	259,957	154,164

(*1) As of December 31, 2022, the Company has set an allowance for doubtful accounts of ₩446,266 million for receivables of Doosan Power Systems India Private Ltd., and the ₩97,475 million was recognized as bad debt expenses in 2022.

(*2) As of December 31, 2022, the Company has set an allowance for doubtful accounts of ₩42,153 million for receivables of Doosan Water UK Ltd. and the same amount was recognized as bad debt expenses in 2022.

(*3) As of December 31, 2022, the Company has set an allowance for doubtful accounts of ₩8,610 million for receivables of Azul Torre Construction Corporation and the ₩281 million was recognized as bad debt expenses in 2022.

(*4) As of December 31, 2022, the Company has set an allowance for doubtful accounts of ₩766 million for receivables of Samcheok Blue Power Co., Ltd. and the ₩951 million was recognized as reversal of allowance for doubtful accounts in 2022.

(*5) As of December 31, 2022, the Company has set an allowance for doubtful accounts of ₩20,595 million for receivables of Doosan Heavy Industries Muscat LLC and the same amount was recognized as bad debt expenses in 2022.

(*6) As of December 31, 2022, the Company has set an allowance for doubtful accounts of ₩250 million for receivables of Tuwaiq Casting & Forging Company and the same amount was recognized as bad debt expenses in 2022.

DOOSAN ENERBILITY CO., LTD.
Notes to the Separate Financial Statements, Continued
For the years ended December 31, 2023 and 2022
33. Related party transactions, Continued
(4) Financial transactions between the Company and related parties

Financial transactions (including investment) with related parties for the years ended December 31, 2023 and 2022 are as follows:

(In millions of won)

Related party	2023				
	Loans		Borrowings	Dividend	Investments
	Lending	Collection	Lease liability paid	Income	Provided
Subsidiaries:					
DPS S.A. (*1)	₩ 16,499	252,062	-	-	252,062
Doosan Recycle Solution Co., Ltd.	-	-	-	-	49,100
Doosan Geosolution Co., Ltd.	-	-	-	-	28,300
Doosan Bobcat Inc.	-	-	-	75,323	-
Doosan Cuvex Co., Ltd.	-	-	-	45,973	-
Osung Power O&M Co., Ltd.	-	-	-	700	-
Doosan Enerbility Vietnam Co., Ltd.	-	-	-	131,585	-
PT. Doosan Heavy Industries Indonesia	24,929	24,929	-	-	-
Doosan Lentjes GmbH	36,667	-	-	-	-
Subtotal	78,095	276,991	-	253,581	329,462
Associates:					
Multi-asset ESG Marine Wind Power Private Equity Fund 1st	-	-	-	-	1,996
BUNDANG DOOSAN TOWER REIT Co., Ltd.	-	-	23,210	1,724	-
Subtotal	-	-	23,210	1,724	1,996
Others:					
KDDI Korea Corporation	-	-	-	43	-
Subtotal	-	-	-	43	-
Total	₩ 78,095	276,991	23,210	255,348	331,458

(*1) In 2023, part of the loans to DPS S.A. were converted into equity.

DOOSAN ENERBILITY CO., LTD.
Notes to the Separate Financial Statements, Continued
For the years ended December 31, 2023 and 2022
33. Related party transactions, Continued
(In millions of won)

Related party	2022							
	Loans		Borrowings		Dividend	Investments		Shares
	Lending	Collection	Repaid	Lease liability paid	Income	Received	Provided	Acquisition
Parent:								
Doosan Corp.	₩ -	-	-	-	-	252,375	-	152,691
Subsidiaries:								
KDPP 5th Co., Ltd.	-	-	49,600	-	-	-	-	-
DPS S.A.	204,992	-	-	-	-	-	-	-
Doosan Ukudu Power, LLC.	-	257	-	-	-	-	-	-
Doosan Power Systems India Private Ltd.	67,862	-	-	-	-	-	-	-
Doosan GridTech Inc.	11,057	11,057	-	-	-	-	-	-
Doosan Power Systems Arabia Company Limited	9,891	-	-	-	-	-	-	-
D20 Capital, LLC	-	-	-	-	19,190	-	-	-
Doosan Bobcat Inc.	-	-	-	-	92,117	-	-	47,084
Doosan Water UK Ltd.	36,119	-	-	-	-	-	-	-
Osung Power O&M Co., Ltd.	-	-	-	-	1,000	-	-	-
Subtotal	329,921	11,314	49,600	-	112,307	-	-	47,084
Associates:								
Hychangwon Co., Ltd.	-	-	-	-	-	-	2,000	-
Tuwaiq Casting & Forging Company	-	-	-	-	-	-	43,926	-
Multi-asset ESG Marine Wind Power Private Equity Fund 1 st	-	-	-	-	-	-	8,500	-
Subtotal	-	-	-	-	-	-	54,426	-
Others:								
BUNDANG DOOSAN TOWER REIT Co., Ltd.	-	-	-	17,095	-	-	-	-
KDDI Korea Corporation	-	-	-	-	89	-	-	-
Oricom Inc.	-	-	-	-	-	-	-	7,495
Hancom Inc.	-	-	-	-	-	-	-	14,972
Subtotal	-	-	-	17,095	89	-	-	22,467
Total	₩ 329,921	11,314	49,600	17,095	112,396	252,375	54,426	222,242

(5) Guarantees of payment and collateral provided by and to the related party

The Company provides or receives payment guarantees and collateral with regard to the related party as of December 31, 2023 (See Notes 31 and 32).

33. Related party transactions, Continued**(6) Key management compensation**

Key management personnel are standing directors who have authorities and responsibilities for planning, operation and control of the business of the Company. Compensation for key management personnel for the years ended December 31, 2023 and 2022 consists of following:

<i>(In millions of won)</i>		2023	2022
Short-term employee benefits	₩	23,716	26,421
Severance and retirement benefits		4,193	19,868
Share-based payments (*1)		2,276	1,611
Total	₩	30,185	47,900

(*1) Expenses under the cash-settled performance-linked stock compensation system granted to management during the current period. After the 3 years of vesting period beginning from the commencement date of the business year to which the grant date(May 9, 2022) belongs, the compensation amount will be paid in cash to at the end of February.

34. Separate statements of cash flows

(1) Details of cash generated from operation for the years ended December 31, 2023 and 2022 are as follows:

<i>(In millions of won)</i>	2023	2022
Loss for the period:	₩ (104,179)	(1,211,843)
Adjustments:		
Interest expenses	165,130	141,735
Loss on foreign currency translation	26,641	110,952
Bad debt expenses	14,331	37,075
Other bad debt expenses	145,083	129,601
Loss on valuation of derivative financial instruments	83,812	96,296
Loss on transaction of derivative financial instruments	-	28,480
Loss on valuation of firm commitments	27,139	54,102
Provision for loss compensation	-	530
Provision for construction warranties	8,723	34,797
Provision for warranty expenses	35,488	38,968
Depreciation	97,972	97,600
Amortization	35,599	60,553
Income tax benefit	(130,519)	(108,647)
Cost of stock options	2,276	1,611
Severance and retirement benefits	34,292	51,105
Gain (loss) on valuation of inventory	(4,235)	4,726
Loss on disposal of property, plant and equipment	1,252	3,419
Impairment loss of intangible assets	157	64,682
Impairment loss of assets held-for-sale	37,837	-
Impairment loss of property, plant and equipment	240	17,755
Loss on disposal of assets held-for-sale	2,295	-
Impairment loss of Investments in subsidiaries, associates and joint ventures	325,807	858,404
Loss on disposal of investments in subsidiaries	-	157,935
Loss on valuation of long-term investment securities	39,414	4,580
Loss on disposal of long-term investment securities	-	530
Interest income	(46,395)	(24,900)
Dividend income	(256,118)	(114,363)
Gain on foreign currency translation	(34,039)	(61,273)
Gain on valuation of derivatives financial instruments	(66,182)	(90,160)
Gain on transaction of derivatives financial instruments	(10,842)	-
Gain on valuation of firm commitments	(43,958)	(67,459)
Gain on disposal of property, plant and equipment	(1,332)	(1,539)
Gain on disposal of intangible assets	(872)	(118)
Gain on valuation of long-term investment securities	(3,143)	(20,479)
Gain on disposal of long-term investment securities	(94)	(1,802)
Gain on disposal of investments in subsidiaries	(36,620)	-
Reversal of provision for construction warranties	(24,477)	(7,827)
Reversal of provision for warranty expenses	(7,664)	(708)
Others	28,353	12,238
Subtotal	<u>445,351</u>	<u>1,508,399</u>

34. Separate statements of cash flows, Continued*(In millions of won)*

	2023	2022
Changes in operating assets and liabilities:		
Trade receivables	₩ (112,780)	(387,691)
Due from customers for contract work	(175,240)	301,309
Other receivables	(178,277)	(42,387)
Prepayments	94,003	(144,039)
Inventories	39,279	30,024
Derivative financial assets and liabilities	9,629	(57,417)
Firm commitments assets and liabilities	51,309	(8,183)
Trade payables	105,477	138,484
Other payables	138,715	(132,668)
Advance receipts	(487)	(6,380)
Due to customers for contract work	455,538	305,875
Accrued expenses	80,105	37,031
Severance payments paid	(28,650)	(20,533)
Plan assets	11,645	10,244
Others	12,023	17,486
Subtotal	502,289	41,155
Cash generated from operations	₩ 843,461	337,711

(2) Significant non-cash transactions for the years ended December 31, 2023 and 2022 are as follows:

(In millions of won)

	2023	2022
Transfer to current portion of bonds, borrowings and others	₩ 1,463,642	611,963
Transfer from construction-in-progress to other assets	67,904	81,468
Write-off of trade and other receivables	-	41,007
Transfer to assets held-for-sale	34,778	-
Acquisition of right-of-use assets	15,824	10,039
Acquisition and transfer of investment property	-	83,558
Acquisition of an associate through dividend in-kind	45,973	-
Conversion of convertible bonds	24,600	-
Acquisition of subsidiaries through debt-for-equity conversion	252,062	-

34. Separate statements of cash flows, Continued

(3) Changes of liability in financing activities for the years ended December 31, 2023 and 2022 are summarized as follows:

(In millions of won)

	2023						
	Balance as of January 1	Cash flows from financing activities, net	Non-cash changes				Balance as of December 31
			Current portion of long-term debt	Changes in foreign currency translation	Interest expenses amortization	Others (*1)	
Short-term borrowings	₩ 1,249,782	(282,278)	-	330	-	-	967,834
Current portion of long-term debt	641,668	(658,428)	1,439,765	1,992	3,450	(24,600)	1,403,847
Current financial lease liabilities	29,844	(27,369)	23,877	-	-	(153)	26,199
Bonds	259,131	429,527	(274,357)	7,081	1,721	-	423,103
Long-term borrowings	1,113,280	326,344	(1,165,408)	11,538	1,435	-	287,189
Non-current lease liabilities	142,460	-	(23,877)	24	-	10,606	129,213
Total	₩ 3,436,165	(212,204)	-	20,965	6,606	(14,147)	3,237,385

(*1) Non-cash changes such as exercise of conversion right and account transfer are included.

(In millions of won)

	2022						
	Balance as of January 1	Cash flows from financing activities, net	Non-cash changes				Balance as of December 31
			Current portion of long-term debt	Changes in foreign currency translation	Interest expenses amortization	Others (*1)	
Short-term borrowings	₩ 3,279,423	(2,024,348)	-	(5,293)	-	-	1,249,782
Current portion of long-term debt	899,500	(917,843)	588,481	66,571	5,602	(643)	641,668
Current lease liabilities	26,141	(19,779)	23,482	-	-	-	29,844
Bonds	422,363	270,000	(433,430)	-	198	-	259,131
Long-term borrowings	122,493	1,144,345	(155,051)	-	1,493	-	1,113,280
Non-current lease liabilities	157,488	-	(23,482)	124	-	8,330	142,460
Total	₩ 4,907,408	(1,547,625)	-	61,402	7,293	7,687	3,436,165

(*1) Non-cash changes such as account transfer are included.

35. Assets held for sale

Details of assets held for sale as of December 31, 2023 and 2022 are as follows:

<i>(In millions of won)</i>	2023	2022
Investments in an associate (*1)	₩ 10,406	-
Property, plant and equipment (*2)	256	2,813
Investment property (*3)	22,966	-
Subtotal	33,628	2,813
Accumulated impairment loss(*2)	(41)	(846)
Total	₩ 33,587	1,967

(*1) In 2023, the Company decided to sell all the shares of Multi-asset ESG Marine Wind Power Private Equity Fund 1st, and the shares were reclassified to assets held-for-sale (See Note 11).

(*2) In 2023, the Company reclassified certain land and buildings as assets held-for-sale. Also, the sale of the assets held-for-sale was partially completed (See Note 12).

(*3) In 2023, the Company signed a sales contract of land and buildings located in Icheon-si, Gyeonggi-do, and classified them as assets held-for-sale.

Assets held-for-sale are measured at the lower of their previous carrying amount and fair value less costs to sell and the impairment loss, the difference between the carrying amount and the fair value, is recognized as other non-operating expense.

36. Approval of financial statements

The separate financial statements for 2023 were authorized for issue by the Board of Directors on February 7, 2024 and will get final approval during the shareholders' meeting on March 26, 2024.

Independent Auditors' Report on Internal Control over Financial Reporting

Based on a report originally issued in Korean

To the Shareholders and Board of Directors of
Doosan Enerbility Co., Ltd.:

Opinion on Internal Control over Financial Reporting

We have audited Doosan Enerbility Co., Ltd.'s ("the Company") internal control over financial reporting ("ICFR") as of December 31, 2023 based on the criteria established in the Conceptual Framework for Designing and Operating ICFR ("ICFR Design and Operation Framework") issued by the Operating Committee of Internal Control over Financial Reporting in the Republic of Korea (the "ICFR Committee").

In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2023, based on ICFR Design and Operation Concept Framework.

We also have audited, in accordance with Korean Standards on Auditing ("KSAs"), the separate financial statements of the Company, which comprise the separate statements of financial position as of December 31, 2023 and 2022, the separate statements of loss and comprehensive loss, changes in equity and cash flows for the years then ended, and notes, comprising material accounting policy information and other explanatory information, and our report dated March 15, 2024 expressed an unmodified opinion on those separate financial statements.

Basis for Opinion

We conducted our audit in accordance with KSAs. Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Internal Control over Financial Reporting section of our report. We are independent of the Company in accordance with the ethical requirements that are relevant to our audit of the internal control over financial reporting in 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.

Responsibilities of Management and Those Charged with Governance for the Internal Control over Financial Reporting

The Company's management is responsible for designing, operating and maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Report on the Operational Status of Internal Control over Financial Reporting.

Those charged with governance are responsible for overseeing the Company's internal control over financial reporting.

Auditors' Responsibilities for the Audit of the Internal Control over Financial Reporting

Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We conducted our audit in accordance with KSAs. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk.



Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with Korean International Financial Reporting Standards ("K-IFRS"). The company's internal control over financial reporting 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; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with K-IFRS, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls 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 auditors' report is Jeong Gu Kang.

KPMG Samjony Accounting Corp.

Seoul, Korea

March 15, 2024

This report is effective as of March 15, 2024, the audit report date. Certain subsequent events or circumstances, which may occur between the audit report date and the time of reading this report, could have a material impact on the internal control over financial reporting. Accordingly, the readers of the audit report should understand that the above audit report has not been updated to reflect the impact of such subsequent events or circumstances, if any.

Report on the Operational Status of Internal Control over Financial Reporting ("ICFR")

English Translation of a Report Originally Issued in Korean

To the Shareholders, Board of Directors and Audit Committee of Doosan Enerbility Co., Ltd.

We, as the CEO and Internal Accounting Control Officer ("IACO") of Doosan Enerbility Co., Ltd. ("the Company"), assessed the status of the design and operation of the Company's ICFR for the year ended December 31, 2023.

The Company's management including CEO and IACO are responsible for designing and operating ICFR. We, as the CEO and IACO, assessed whether the ICFR has been appropriately designed and is effectively operating to prevent and detect any error or fraud which may cause any misstatement of the financial statements, for the purpose of preparing and disclosing reliable financial statement.

We, as the CEO and IACO, adopted the 'ICFR Design and Operation Concept Framework' established by the Operating Committee of Internal Control over Financial Reporting for the design and operation of the ICFR. Also applied the 'ICFR Assessment and Reporting Standards' established by the Operating Committee of Internal Control over Financial Reporting for the assessment of design and operation of the ICFR.

Based on assessment of the ICFR, the Company's ICFR has been appropriately designed and is operating effectively as of December 31, 2023, in all material respect, in accordance with the ICFR Design and Operation Concept Framework.

We, as the Company's CEO and IACO, confirmed that the contents of the report are not misstated or displayed, and there is no missing information to be stated or displayed.

Also, We, as the Company's CEO and IACO, confirmed that the report did not contain or display any content that cause major misunderstanding, and sufficiently reviewed the report.

7 February 2024

Chief Executive Officer SANGHYUN PARK
Internal Accounting Control Officer SANGJU JEONG

