

DOOSAN ROBOTICS INC. and Subsidiary

Consolidated Financial Statements

December 31, 2022, 2021 and 2020

(With Independent Auditors' Report Thereon)

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Independent Auditors' Report

The Shareholders and Board of Directors
Doosan Robotics Inc.:

Opinion

We have audited the consolidated financial statements of Doosan Robotics Inc. and its subsidiary ("the Group"), which comprise the consolidated statements of financial position as of December 31, 2022, 2021 and 2020, the consolidated statements of comprehensive loss, changes in equity and cash flows for the years then ended, and notes, comprising significant accounting policies and other explanatory information.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Group as of December 31, 2022, 2021 and 2020, and its consolidated financial performance and its consolidated cash flows for the years then ended in accordance with Korean International Financial Reporting Standards ("K-IFRS").

Basis for Opinion

We conducted our audits in accordance with Korean Standards on Auditing ("KSAs"). Our responsibilities under those standards are further described in the *Auditors' Responsibilities for the Audit of the Consolidated Financial Statements* section of our report. We are independent of the Group in accordance with the ethical requirements that are relevant to our audit of the consolidated financial statements in 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.

Other Matter

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

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

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

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

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



Auditors' Responsibilities for the Audit of the Consolidated Financial Statements

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

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

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



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

KPMG Samjong Accounting Corp.

Seoul, Korea
May 23, 2023

This report is effective as of May 23, 2023, the audit report date. Certain subsequent events or circumstances, which may occur between the audit report date and the time of reading this report, could have a material impact on the accompanying consolidated financial statements and notes thereto. Accordingly, the readers of the audit report should understand that the above audit report has not been updated to reflect the impact of such subsequent events or circumstances, if any.

Doosan Robotics Inc. and Subsidiary
Consolidated Statements of Financial Position
As of December 31, 2022, 2021 and 2020

<i>(In won)</i>	Note	2022	2021	2020
Assets				
Cash and cash equivalents	4,8	₩ 7,429,941,637	4,389,647,132	2,620,608,450
Short-term financial instruments	4,8	688,777,550	-	-
Trade receivables, net	4,5,8,28	10,644,394,486	8,558,463,058	3,385,433,540
Other receivables, net	4,5,8,28	412,428,534	22,133,300	81,910,145
Current income tax assets		49,669,030	1,047,590	4,204,910
Inventories, net	7	13,391,140,557	5,615,255,454	5,323,058,197
Current guarantee deposits	4,8	84,782,370	100,000,000	54,000,000
Other current assets	6	6,135,652,668	975,987,810	535,581,648
Total current assets		38,836,786,832	19,662,534,344	12,004,796,890
Long-term investments in securities	4,8,9,28	2,400,000,000	-	-
Property, plant and equipment, net	10	9,295,607,265	5,697,999,647	6,077,664,391
Intangible assets, net	11	6,677,424,272	2,056,107,989	2,017,397,310
Long-term trade receivables, net	4,5,8,28	113,533,846	-	-
Guarantee deposits	4,8	1,298,309,472	504,722,200	504,722,200
Right-of-use assets, net	12	3,734,858,708	1,523,706,212	1,681,179,959
Other non-current assets, net	6	261,884,201	-	-
Defined benefit asset, net	18	-	-	45,901,057
Total non-current assets		23,781,617,764	9,782,536,048	10,326,864,917
Total assets		₩ 62,618,404,596	29,445,070,392	22,331,661,807
Liabilities				
Trade payables	4,8,13,28	3,874,596,448	5,036,008,918	3,216,650,136
Short-term borrowings	4,8,14,28	-	-	3,000,000,000
Other payables	4,8,13,28	3,516,536,891	2,427,041,112	899,875,749
Current provisions	15	483,679,171	565,804,211	939,293,352
Current lease liabilities	4,8,16	829,062,723	297,664,229	222,846,825
Other current liabilities	17	6,032,862,993	3,482,024,707	2,927,824,428
Total current liabilities		14,736,738,226	11,808,543,177	11,206,490,490
Defined benefit liabilities, net	18	1,391,087,491	87,517,613	-
Provisions	15	53,315,051	188,059,413	-
Non-current lease liabilities	4,8,16	3,417,793,905	1,544,332,382	1,708,107,789
Other non-current liabilities	17	254,108,070	314,537,862	277,860,520
Total non-current liabilities		5,116,304,517	2,134,447,270	1,985,968,309
Total liabilities		19,853,042,743	13,942,990,447	13,192,458,799
Equity				
Capital stock	19	24,309,990,000	22,100,000,000	20,700,000,000
Capital surplus	19	101,092,604,370	63,575,564,238	50,985,994,738
Accumulated other comprehensive loss		(22,280,520)	-	-
Accumulated deficit		(82,614,951,997)	(70,173,484,293)	(62,546,791,730)
Equity attributable to owners of the controlling company		42,765,361,853	15,502,079,945	9,139,203,008
Non-controlling interests		-	-	-
Total equity		42,765,361,853	15,502,079,945	9,139,203,008
Total liabilities and equity		₩ 62,618,404,596	29,445,070,392	22,331,661,807

See accompanying notes to the consolidated financial statements.

Doosan Robotics Inc. and Subsidiary
Consolidated Statements of Comprehensive Loss
For the years ended December 31, 2022, 2021 and 2020

<i>(In won)</i>	Note	2022	2021	2020
Sales	21	₩ 44,953,674,400	36,980,223,150	20,164,008,239
Cost of sales	22	30,710,139,904	25,597,845,069	15,714,402,414
Gross profit		14,243,534,496	11,382,378,081	4,449,605,825
Selling and administrative expenses	22,23	27,471,867,581	18,467,091,359	18,305,105,281
Operating loss		(13,228,333,085)	(7,084,713,278)	(13,855,499,456)
Finance income	8,24	819,201,449	247,214,148	144,266,993
Finance expenses	8,24	1,027,296,463	582,374,290	634,750,702
Other non-operating income	8,25	981,391,716	40,218,388	87,086,854
Other non-operating expenses	25	93,143,755	37,750,599	193,920,487
Loss before income tax		(12,548,180,138)	(7,417,405,631)	(14,452,816,798)
Income tax expense	26	-	-	-
Loss for the year	27	(12,548,180,138)	(7,417,405,631)	(14,452,816,798)
Owners of the Company		(12,548,180,138)	(7,417,405,631)	(14,452,816,798)
Non-controlling interests		-	-	-
Other comprehensive income (loss)		84,431,914	(209,286,932)	21,006,622
Items that will not be reclassified subsequently to profit or loss		106,712,434	(209,286,932)	21,006,622
Remeasurements of the defined benefit liabilities	18	106,712,434	(209,286,932)	21,006,622
Items that are or may be reclassified subsequently to profit or loss		(22,280,520)	-	-
Loss on translation of foreign operations		(22,280,520)	-	-
Total comprehensive loss for the year		₩ (12,463,748,224)	(7,626,692,563)	(14,431,810,176)
Total comprehensive loss attributable to:				
Owners of the Company		(12,463,748,224)	(7,626,692,563)	(14,431,810,176)
Non-controlling interests		-	-	-
Basic and diluted loss per share	27	(2,594)	(1,730)	(3,491)

See accompanying notes to the consolidated financial statements.

Doosan Robotics Inc. and Subsidiary
Consolidated Statements of Changes in Equity
For the years ended December 31, 2022, 2021 and 2020

<i>(In won)</i>		Capital stock	Capital surplus	Accumulated other comprehensive loss	Accumulated deficit	Subtotal	Non-controlling interests	Total Equity
Balance at January 1, 2020	₩	20,700,000,000	50,985,994,738	-	(48,114,981,554)	23,571,013,184	-	23,571,013,184
Loss for the year		-	-	-	(14,452,816,798)	(14,452,816,798)	-	(14,452,816,798)
Remeasurements of defined benefit liabilities		-	-	-	21,006,622	21,006,622	-	21,006,622
Balance at December 31, 2020		<u>20,700,000,000</u>	<u>50,985,994,738</u>	<u>-</u>	<u>(62,546,791,730)</u>	<u>9,139,203,008</u>	<u>-</u>	<u>9,139,203,008</u>
Balance at January 1, 2021		20,700,000,000	50,985,994,738	-	(62,546,791,730)	9,139,203,008	-	9,139,203,008
Issuance of ordinary shares		1,400,000,000	12,589,569,500	-	-	13,989,569,500	-	13,989,569,500
Loss for the year		-	-	-	(7,417,405,631)	(7,417,405,631)	-	(7,417,405,631)
Remeasurements of defined benefit liabilities		-	-	-	(209,286,932)	(209,286,932)	-	(209,286,932)
Balance at December 31, 2021		<u>22,100,000,000</u>	<u>63,575,564,238</u>	<u>-</u>	<u>(70,173,484,293)</u>	<u>15,502,079,945</u>	<u>-</u>	<u>15,502,079,945</u>
Balance at January 1, 2022		22,100,000,000	63,575,564,238	-	(70,173,484,293)	15,502,079,945	-	15,502,079,945
Issuance of ordinary shares		2,209,990,000	37,517,040,132	-	-	39,727,030,132	-	39,727,030,132
Loss for the year		-	-	-	(12,548,180,138)	(12,548,180,138)	-	(12,548,180,138)
Remeasurements of defined benefit liabilities		-	-	-	106,712,434	106,712,434	-	106,712,434
Loss on translation of foreign operations		-	-	(22,280,520)	-	(22,280,520)	-	(22,280,520)
Balance at December 31, 2022	₩	<u>24,309,990,000</u>	<u>101,092,604,370</u>	<u>(22,280,520)</u>	<u>(82,614,951,997)</u>	<u>42,765,361,853</u>	<u>-</u>	<u>42,765,361,853</u>

See accompanying notes to the consolidated financial statements.

Doosan Robotics Inc. and Subsidiary
Consolidated Statements of Cash Flows
For the years ended December 31, 2022, 2021 and 2020

(In won)	Note	2022	2021	2020
Cash flows from operating activities				
Cash generated from operations:	30 ₩	(22,171,431,112)	(7,248,985,486)	(3,715,572,393)
Loss for the year		(12,548,180,138)	(7,417,405,631)	(14,452,816,798)
Adjustments		5,953,843,270	3,576,031,766	4,512,704,176
Changes in operating assets and liabilities		(15,577,094,244)	(3,407,611,621)	6,224,540,229
Interest received		114,427,248	6,818,849	45,087,255
Interest paid		(545,827,410)	(413,237,440)	(368,308,227)
Income tax refund received (paid)		(48,621,440)	3,157,320	11,628,040
Net cash used in operating activities		<u>(22,651,452,714)</u>	<u>(7,652,246,757)</u>	<u>(4,027,165,325)</u>
Cash flows from investing activities				
Cash inflows from investing activities:				
Decrease in short-term financial assets		32,931,953,479	-	-
Decrease in long-term financial assets		60,510,970,143	-	-
Decrease in short-term financial instruments		-	-	3,000,000,000
Proceeds from disposal of property, plant and equipment		-	-	179,091
Collection of guarantee deposits		100,000,000	54,000,000	-
Subtotal		<u>93,542,923,622</u>	<u>54,000,000</u>	<u>3,000,179,091</u>
Cash outflows for investing activities:				
Increase in short-term financial instruments		(688,777,550)	-	-
Increase in short-term financial assets		(32,660,410,414)	-	-
Increase in long-term financial assets		(60,510,970,143)	-	-
Acquisition in long-term investments in securities		(2,400,000,000)	-	-
Acquisition of property, plant and equipment		(4,396,352,496)	(662,762,227)	(2,495,895,511)
Acquisition of intangible assets		(5,382,427,284)	(627,958,548)	(60,064,404)
Acquisition of guarantee deposits		(878,369,642)	(100,000,000)	(4,722,200)
Subtotal		<u>(106,917,307,529)</u>	<u>(1,390,720,775)</u>	<u>(2,560,682,115)</u>
Net cash provided by (used in) investing activities		<u>(13,374,383,907)</u>	<u>(1,336,720,775)</u>	<u>439,496,976</u>
Cash flows from financing activities				
Cash inflows from financing activities:				
Issuance of ordinary shares		39,727,030,132	13,989,569,500	-
Proceeds from short-term borrowings		-	-	3,000,000,000
Subtotal		<u>39,727,030,132</u>	<u>13,989,569,500</u>	<u>3,000,000,000</u>
Cash outflows for financing activities:				
Payment of lease liabilities		(790,460,919)	(222,436,787)	(203,230,762)
Repayment of short-term borrowings		-	(3,000,000,000)	-
Subtotal		<u>(790,460,919)</u>	<u>(3,222,436,787)</u>	<u>(203,230,762)</u>
Net cash provided by financing activities		<u>38,936,569,213</u>	<u>10,767,132,713</u>	<u>2,796,769,238</u>
Effect of movements in exchange rates on cash held				
		129,561,913	(9,126,499)	(105,154,620)
Net increase (decrease) in cash and cash equivalents				
		3,040,294,505	1,769,038,682	(896,053,731)
Cash and cash equivalents at January 1				
		4,389,647,132	2,620,608,450	3,516,662,181
Cash and cash equivalents at December 31				
	₩	<u>7,429,941,637</u>	<u>4,389,647,132</u>	<u>2,620,608,450</u>

See accompanying notes to the consolidated financial statements.

Doosan Robotics Inc. and Subsidiary
Notes to the Consolidated Financial Statements
For the years ended December 31, 2022, 2021 and 2020

1. Reporting entity

(1) The controlling company

Doosan Robotics Inc. (the "Company"), the controlling company according to the Korean International Financial Reporting Standards ("K-IFRS") No. 1110 'Consolidated Financial Statements', was incorporated on July 31, 2015, and engages in the manufacturing of industrial robots. As of December 31, 2022, The Company's headquarters is located at 79, Saneop-ro 156beon-gil, Gwonseon-gu, Suwon-si, Gyeonggi-do, Korea.

The Company's capital stock is ₩24,309,990 thousand and its major stockholders as of December 31, 2022 are as follow:

Stockholder	Number of shares (In shares)	Ownership (%)
Doosan Corp.	4,420,000	90.91
Cobot Holdings Limited Liability Company	331,499	6.82
KIP Robotics Ltd	110,499	2.27
Total	4,861,998	100.00

(2) Consolidated subsidiary

Details of consolidated subsidiary as of December 31, 2022 are as follows:

Company	Ownership (%)	Location	Closing date	Key operating activities
Doosan Robotics Americas, LLC (*1)	100.00	USA	December 31	Manufacturing and sales

(*1) Newly established in 2022 by investment amounted to ₩4,525,150 thousand.

(3) Summarized financial information of subsidiary as of and for the year ended December 31, 2022 is as follows:

(In thousands of won)

Company	Assets	Liabilities	Sales	Net profit (loss)	Total comprehensive income (loss)
Doosan Robotics Americas, LLC ₩	3,579,308	198,580	-	(1,122,141)	(1,122,141)

Doosan Robotics Inc. and Subsidiary
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2022, 2021 and 2020

2. Significant accounting policies and basis of preparation

(1) Basis of consolidated financial statements

The Company and its subsidiary ("the Group") have prepared consolidated financial statements in accordance with K-IFRS, which are the International Financial Reporting Standards issued by the International Accounting Standards Board (IASB) adopted in Korea as stipulated in Article 5(1)(1) of the Act on External Audit of Stock Companies.

The significant accounting principles have been consistently applied in preparing the consolidated financial statements for all periods presented, except for the effects associated with the introduction of new or amended Standard or Interpretation as described below.

(2) Basis of measurement

The accompanying consolidated 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.

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date, regardless of whether that price is directly observable or estimated using another valuation technique. In estimating the fair value of an asset or a liability, the Group takes into account the characteristics of the asset or liability if market participants would take those characteristics into account when pricing the asset or liability at the measurement date. Fair value for measurement and/or disclosure purposes in these consolidated financial statements is determined on such a basis, except for share-based payment transactions that are within the scope of K-IFRS No. 1102 Share-based payment, leasing transactions that are within the scope of K-IFRS No. 1116 Leases, and measurements that have some similarities to fair value but are not fair value, such as net realizable value in K-IFRS No. 1002 Inventories or value in use in K-IFRS No. 1036 Impairment of Assets.

(3) Functional currency and presentation currency

The Group's consolidated financial statements are presented in the currency of the primary economic environment in which it operates (its functional currency). The functional currency of the Group and the presentation currency for the consolidated financial statements of the Group are Korean won.

(4) Changes in accounting standards

1) Changes in accounting standards effective from January 1, 2022 are as follows:

- K-IFRS No. 1037 'Provisions, Contingent Liabilities and Contingent Assets'
- K-IFRS No. 1016 'Property, Plant and Equipment'
- Annual improvements to K-IFRS 2018-2020

The Group believes that these amendments have no significant impact on the Group's consolidated financial statements.

Doosan Robotics Inc. and Subsidiary
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2022, 2021 and 2020

2. Significant accounting policies and basis of preparation, Continued

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

- K-IFRS No. 1012 'Income Taxes' - Deferred Tax related to Assets and Liabilities arising from a Single Transaction
- K-IFRS No. 1001 'Presentation of Financial Statements' - Classification of Liabilities as Current or Non-current
- K-IFRS No. 1008 'Accounting policies, changes in accounting estimates and errors' - Definition of Accounting Estimates

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

(5) Basis of consolidation

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

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

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

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

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

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

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

Doosan Robotics Inc. and Subsidiary
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2022, 2021 and 2020

2. Significant accounting policies and basis of preparation, Continued

If the Group loses control over a subsidiary, the Group:

- derecognizes the assets (including goodwill) and liabilities of the subsidiary;
- derecognizes the carrying amount of any non-controlling interests;
- derecognizes the cumulative translation differences recorded in equity;
- recognizes the fair value of the consideration received;
- recognizes the fair value of any investment retained;
- recognizes any surplus or deficit in profit or loss.

(6) Investments in associates and joint ventures

An associate is an entity over which the Group has significant influence and that is neither a subsidiary nor an interest in a joint venture. Significant influence is the power to participate in the financial and operating policy decisions of the investee but is not control or joint control over those policies.

A joint venture is a joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the joint arrangement. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require unanimous consent of the parties sharing control.

The results and assets and liabilities of associates or joint ventures are incorporated in these financial statements using the equity method of accounting, except when the investment is classified as held for sale, in which case it is accounted for in accordance with K-IFRS 1105. Under the equity method, an investment in an associate or a joint venture is recognized initially in the consolidated statement of financial position at cost and adjusted thereafter to recognize the Group's share of the profit or loss and other comprehensive income of the associate or joint venture. When the Group's share of losses of an associate or a joint venture exceeds the Group's interest in that associate or joint venture (which includes any long-term interests that, in substance, form part of the Group's net investment in the associate or joint venture), the Group discontinues recognizing its share of further losses. Additional losses are recognized only to the extent that the Group has incurred legal or constructive obligations or made payments on behalf of the associate or joint venture.

On acquisition of the investment in an associate or a joint venture, any excess of the cost of the investment over the Group's share of the net fair value of the identifiable assets and liabilities of the investee is recognized as goodwill. Goodwill is included within the carrying amount of the investment and is tested for impairment as part of the investment. If the Group's interest in the net fair value of identifiable assets, liabilities and contingent liabilities in excess of the cost of purchase exists after the review, it is recognized in profit or loss.

If the entity has retained some of the investment assets of existing associates and joint ventures even after it has lost significant influence over the associates and joint ventures, the fair value of the investment assets at the point of time when the significant influence is lost is considered to be the fair value at the initial recognition of the financial asset in accordance with K-IFRS No. 1039. The difference between the carrying amount of the investment and the fair value of the investment is recognized in profit or loss, including the gain or loss on disposal of the associate. In addition, the investor accounts for all amounts recognized as other comprehensive income in relation to the associate and the joint venture on the same basis as the accounting treatment in case the associate and the joint venture directly dispose of the related asset or liability. Therefore, when an associate is required to reclassify the gain or loss previously recognized in other comprehensive income to the profit or loss as a result of the disposal of the asset or liability, the investor may reclassify gain or loss on equity to profit or loss (reclassification adjustment).

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2. Significant accounting policies and basis of preparation, Continued

If the Group's ownership interest in an associate or a joint venture is reduced, but the investment continues to be classified either as an associate or a joint venture respectively, the Group reclassifies to profit or loss the proportion of the gain or loss that had previously been recognised in other comprehensive income relating to that reduction in ownership interest if that gain or loss would be required to be reclassified to profit or loss on the disposal of the related assets or liabilities. In addition, K-IFRS No. 1105 is applied when a portion of investments in associates or joint ventures meets the criteria for sale.

The Group determines whether an impairment indicator exists in respect of investments in associates and joint ventures in accordance with K-IFRS No. 1039 'Financial Instruments: Recognition and Measurement'. If there is an indication of impairment, the total carrying amount of the associate and joint venture (including goodwill) is compared to the recoverable amount (the greater of fair value less cost to sell and value in use) in accordance with K-IFRS No. 1036 'Impairment of Assets'. The recognized impairment loss is not allocated to any assets (including goodwill) that are part of the carrying amount of associates and joint ventures. The reversal of impairment loss is recognized in accordance with K-IFRS No. 1036 as the recoverable amount of the investment assets increases subsequently.

When an associate becomes a joint venture or, conversely, a joint venture becomes an associate, the Group continues to apply the equity method and does not remeasure residual equity.

When a group entity transacts with an associate or a joint venture of the Group, profits and losses resulting from the transactions with the associate or joint venture are recognized in the Group's consolidated financial statements only to the extent of interests in the associate or joint venture that are not related to the Group.

(7) Cash and cash equivalents

The Group is classifying investments with maturities of three months or less upon acquisition as cash and equivalents. Equity securities are excluded from cash and cash equivalents, but if they have a specified repayment date and a short-term period from the acquisition date to the repayment date, such as preferred stock, which is essentially a cash equivalent, they are included in cash and cash equivalents.

(8) Trade receivables

Trade receivables are amounts owed by customer for products and services provided in the ordinary course of business. 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.

(9) 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 Group becomes a party to the contractual provisions of the instruments.

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

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2. Significant accounting policies and basis of preparation, Continued

2) Classification and subsequent measurement

On initial recognition, a financial asset is classified as measured at: amortized cost; fair value through other comprehensive income ("FVOCI") - debt investment; FVOCI - equity investment; or FVTPL. The classification of financial assets is generally based on the business model in which a financial asset is managed and its contractual cash flow characteristics. In case of changing its business model, all affected financial asset are reclassified on the first day of the first reporting period after the change in the business model.

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

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

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

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

On initial recognition of an equity investment that is not held for trading, the Group may irrevocably elect to present subsequent changes in the investment's fair value in other comprehensive income. This election is made on an investment-by-investment basis and irrevocable election can be made at initial recognition.

All financial assets not classified as measured at amortized cost or FVOCI as described above are measured at FVTPL. This includes all derivative financial assets. On initial recognition, the Group may irrevocably designate a financial asset that otherwise meets the requirements to be measured at amortized cost or at FVOCI as at FVTPL if doing so eliminates or significantly reduces an accounting mismatch that would otherwise arise. However, once the designation is made, it cannot be revoked.

The Group 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 (These include management strategies that focus on obtaining contractual interest income, maintaining a specific level of interest return, matching the duration of the liability to raise the financial asset with the duration of the financial asset, and the outflow or realization of expected cash flows through the sale of the asset);
- 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 Group's continuing recognition of the assets.

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2. Significant accounting policies and basis of preparation, Continued

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

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

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

In making this assessment, the Group 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 Group's claim to cash flows from specified assets (e.g. non-recourse features).

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

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

The following accounting policies apply to subsequent measurements of financial assets.

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

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2. Significant accounting policies and basis of preparation, Continued

3) De-recognition

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

The Group enters into transactions whereby it transfers assets recognized in its consolidated statements of financial position but retain either all or substantially all of the risks and rewards of the transferred assets. In these cases, the transferred assets are not derecognized.

4) Offsetting between financial assets and financial liabilities

Financial assets and financial liabilities are offset and the net amount is presented in the consolidated statement of financial position only when the Group 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.

5) Impairment of financial assets

① Recognition of impairment on financial assets

The Group recognizes loss allowances for expected credit losses ("ECLs") on:
- financial assets measured at amortized costs.

The Group'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 has not increased significantly since the initial recognition of debt investment (lifetime ECLs: ECLs that resulted from all possible default events over the expected life of a financial instrument)

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

In assessing whether the credit risk on a financial instrument has increased significantly since initial recognition and estimating expected credit loss. The Group considers both quantitative and qualitative information that is reasonable and supportable, including historical experience and forward-looking information that is available without undue cost or effort.

Lifetime ECLs are resulted from all possible default events over the expected life of a financial instrument. And 12-month ECLs are resulted from possible default events within the 12 months (or a shorter period if the expected life of the instrument is less than 12 months) after the reporting date.

② Measurement of expected credit loss

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

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2. Significant accounting policies and basis of preparation, Continued

③ 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 becomes 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.

④ 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.

⑤ De-recognition

The Group 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 Group assesses whether there are reasonable expectations of recovering the contractual cash flows from customers and individually assesses the timing and amount of write-off. The Group does not expect that such write-off will be recovered but they may be subject to collection activity according to the Group's past due collection process.

(10) Inventories

Cost of inventories are measured under the weighted average method and consists of the purchase price, cost of conversion and other costs incurred in bringing the inventories to their present location and condition.

Inventories are stated at the lower of cost and net realizable value. The amount of any write-down of inventories to net realizable value and all losses of inventories is recognized as an expense in the period the write-down or loss occurs. The amount of any reversal of any write-down of inventories, arising from an increase in net realizable value, is recognized as a reduction in the amount of inventories recognized as an expense in the period in which the reversal occurs.

(11) Property, plant and equipment

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

Property, plant and equipment is stated at cost less subsequent accumulated depreciation and accumulated impairment losses.

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2. Significant accounting policies and basis of preparation, Continued

The Group does not depreciate land. Depreciation of other property, plant and equipment is calculated to the cost of each asset less residual value using the straight-line method that reflects the expected consumption pattern of future economic benefits is inherent in the asset over the estimated useful lives of the assets as follow:

	Useful lives
Machinery	5~10 years
Vehicles	5 years
Tools and equipment	4~5 years
Office equipment	3~10 years

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

Any gain or loss arising on derecognition of the property, plant and equipment (calculated as the difference between the net disposal proceeds and the carrying amount of the asset) is included in profit or loss in the period in which the property, plant and equipment is derecognized.

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

(12) Intangible assets

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

Intangible assets are amortized on a straight-line basis with residual value set to zero over their estimated useful lives from the date that they are available for use. However, useful lives of 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 Group, are not amortized.

	Useful lives
Industrial property rights	10 years
Development costs	6 years
Others	5 years

The estimated useful life and amortization method for intangible assets with finite useful lives are reviewed at the end of each reporting period and for the assets which have been assessed as having indefinite useful life, that assessment is revisited each period, with the effect of any changes in estimate being accounted for as a change in accounting estimate.

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2. Significant accounting policies and basis of preparation, Continued

(13) Impairment of non-financial assets

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

The Group estimates the recoverable amount of an individual asset, and if it is impossible to measure the individual recoverable amount of an asset, the Group estimates the recoverable amount of cash-generating unit ("CGU"). The recoverable amount of an asset or CGU is the greater of its value in use and its fair value less costs to sell. The value in use is estimated by applying a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset or CGU for which estimated future cash flows have not been adjusted, to the estimated future cash flows expected to be generated by the asset or CGU.

An impairment loss is recognized in profit or loss to the extent the carrying amount of the asset exceeds its recoverable amount.

(14) Non-derivative financial liabilities

The Group 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 Group recognizes financial liabilities in the consolidated statement of financial position when the Group becomes a party to the contractual provisions of the financial liability.

1) Financial liabilities at FVTPL

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

2) Financial liabilities at amortized cost

Non-derivative financial liabilities other than financial liabilities at FVTPL are classified as financial liabilities at amortized cost. At the date of initial recognition, financial liabilities at amortized cost are measured at fair value less any directly attributable transaction costs. Subsequent to initial recognition, financial liabilities at amortized cost are measured at amortized cost using the effective interest rate method.

3) Derecognition of financial liability

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

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

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2. Significant accounting policies and basis of preparation, Continued

(15) Employee benefits

1) Retirement benefits: Defined benefit plans

The retirement benefit obligation represents the present value of the defined benefit obligation, less fair value of plan assets.

The retirement benefit obligation is determined using the Projected Unit Credit Method, with actuarial valuations being carried out at the end of each annual reporting period. When the net amount resulting from deducting the fair value of plan assets from the present value of defined benefit obligations is recognized as an asset, the Group recognizes the asset only up to the present value of available economic benefits, which can be either refunds from the plan or reductions in future contributions to the plan. The components used to remeasure the net defined benefit liabilities include actuarial gains and losses, return on plan assets, and changes in the effect of the asset ceiling excluding amounts included in net interest on the net defined benefit liability, and are immediately recognized in other comprehensive income. The Group calculates the net interest on the net defined benefit liability(asset) by multiplying the net defined benefit liability(asset) at the beginning of the annual reporting period by the discount rate determined at that time, considering the changes in the net defined benefit liability(asset) during the reporting period due to contributions and benefit payments. Net interest costs and other costs related to the defined benefit plan are recognized as expenses in the current period.

Past service cost is recognized in profit or loss when the plan amendment or curtailment occurs. Gains or losses on settlement of a defined benefit plan are recognized when the settlement occurs.

2) Other long-term employee benefits

Other long-term employee benefit obligation is determined using the Projected Unit Credit Method, with actuarial valuations being carried out at the end of each annual reporting period. Long-term employee benefits that are not expected to be paid within 12 months after the end of the reporting period in which employees provided the related services are discounted to their present value, which represents the future salary amount obtained as consideration for the services provided in the current and prior periods. Changes resulting from remeasurement are recognized as expenses in the current period.

(16) Provisions

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

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

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

Provisions for the expected cost of warranty obligations are recognized at the date of sale of the relevant products or rendering of services. The Group is estimating based on past experiences derived from historical warranty data.

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

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2. Significant accounting policies and basis of preparation, Continued

(17) Leases

If the contract exchanges the control of the identified asset for a certain period of time with price of the contract, the contract itself is a lease or the contract contains lease.

1) The Group as lessor

As a lessor, the Group determines whether the lease is a finance lease or an operating lease at the inception of the lease.

To classify each lease, the Group generally determines whether the lease transfers most of the risks and rewards of ownership of the underlying asset. If most of the risks and rewards of ownership of the underlying asset are transferred to the lessee, the lease is classified as a finance lease, otherwise the lease is classified as an operating lease. As one of the evaluation metrics, The Group considers whether the lease term represents a significant portion of the economic life of the underlying asset.

2) The Group as lessee

The Group recognizes right-of-use assets and lease liabilities at the commencement date of the lease. Right-of-use assets are initially measured at cost, and the costs shall comprise the amount of the initial measurement of the lease liability, the initial direct costs incurred by the lessee, any lease payments made at or before the commencement date (less any lease incentives received) and an estimate of costs to be incurred by the lessee in dismantling and removing the underlying asset, or restoring the underlying asset or the site on which it is located.

Right-of-use assets are subsequently depreciated on a straight-line basis from the commencement of the lease to the end of the lease term. However, if the ownership of the license asset is transferred at the end of the lease term or the exercise price of the purchase option is reflected in the cost of the license asset, the right-of-use assets shall be depreciated until the end of the useful life of the underlying asset on the same basis as the depreciation of the property, plant and equipment. Also, right-of-use assets may be adjusted as a result of a reduction in impairment losses or a remeasurement of lease liabilities.

Lease liabilities are initially measured at the present value of the lease payments not paid as of the commencement of the lease. Lease is discounted at the intrinsic interest rate of the lease, but if the intrinsic interest rate is not readily calculated, the lease is discounted at the Group's incremental borrowing rate. Generally, the Group uses the incremental borrowing rate as the discount rate.

Lease liabilities are amortized in accordance with the effective interest method. The Group remeasures the lease liability whenever:

- The lease payments change due to changes in an index or rate
- A change in expected payment under a guaranteed residual value
- A change in the assessment of exercise of a purchase option, extension option or termination option
- Modification of substantial fixed lease payments

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2. Significant accounting policies and basis of preparation, Continued

(18) Revenue recognition

Revenue is stated at the fair value of the consideration received or receivable and net of VAT etc.

Revenue is measured based on the consideration to which the Group expects to be entitled in a contract with a customer and excludes amounts collected on behalf of third parties. The Group recognizes revenue when it transfers control of a product or service to a customer.

1) Sale of goods

Revenue from the sale of goods is recognized when the significant risks and rewards of ownership of the products have been transferred to the customer.

2) Rendering of services

Revenue from rendering of services is recognized when the technical support services on customer's demand are provided.

(19) Issued capital

Common stocks are classified as equity, and the incremental costs directly arising from capital transactions, net of tax are deducted from equity. Preferred stocks are classified as equity only if the preferred stocks are not redeemable or redeemable solely upon the Group's decision, or the distribution of dividends is solely upon the Group's decision. Once a general meeting of shareholders meeting approves dividends, the Group recognizes the dividend liability accordingly. Own equity instruments that are reacquired (treasury shares) are recognized at cost and deducted from equity. No gain or loss is recognized in profit or loss on the purchase, sale, issue or cancellation of the Group's own equity instruments.

(20) Income Tax

Income tax expense is composed of current and deferred tax. Current and deferred tax are recognized in profit or loss, except when they relate to items that are recognized in other comprehensive income or loss or directly in equity or are arising from business combinations.

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2. Significant accounting policies and basis of preparation, Continued

1) Current tax

The tax currently payable is based on taxable profit for the year. Taxable profit differs from profit as reported in the consolidated statement of profit or loss and comprehensive income because of items of income or expense that are taxable or deductible in other years and items that are never taxable or deductible. The Group's liability for current tax is calculated using tax rates that have been enacted or substantively enacted by the end of the reporting period.

2) Deferred tax

The measurement of deferred tax liabilities and deferred tax assets shall reflect the tax consequences that would follow from the manner in which the Group expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities. Deferred tax liabilities are recognized for taxable temporary differences associated with investments in subsidiaries, joint ventures and associates except where the Group is able to control the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. Deferred tax assets arising from deductible temporary differences are recognized to the extent that it is probable that there will be sufficient taxable income against which to utilize the benefits of the temporary differences and they are expected to reverse in the foreseeable future.

A deferred tax asset shall be recognized for the carryforward of unused tax losses, unused tax credits and deductible temporary difference to the extent that it is probable that future taxable profit will be available against which the unused tax losses and unused tax credits can be utilized. Future taxable profit is determined by the reversal of taxable temporary differences.

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

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

Deferred tax assets and liabilities are offset only when they relate to corporate taxes levied by the same taxation authority, when the Group has a legally enforceable right to offset the recognized amounts, and when there is an intention to settle the current corporate tax liabilities and assets on a net basis. If there is an additional corporate tax expense associated with dividend payments, it is recognized at the time when the liability related to dividend payments is recognized.

(21) Operating segments

Operating segments are reported on the same basis as the financial information that is reported to the management of the Group. The management of the Group is responsible for the allocation of resources and assessment of performance for the operating segments.

(22) Approval of consolidated financial statements

The accompanying consolidated financial statements were authorized for issue by the Board of Directors on May 3, 2023.

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3. Significant accounting estimates and judgments

In accordance with the K-IFRS, when preparing consolidated financial statements, it requires the use of management's best judgment based on estimates and assumptions regarding matters that impact the application of accounting policies or the amounts reported for assets, liabilities, revenues, and expenses as of the end of the reporting period. If the estimates and assumptions based on management's best judgment differ from the actual circumstances, the reported results may vary. The following are key accounting estimates and assumptions that may significantly affect the book values of assets and liabilities in the next financial year and include significant risks.

Estimates and its underlying assumptions are continuously reviewed, and changes in accounting estimates are recognized during the period in which the estimates are revised and for the future periods that are affected.

(1) Defined benefit liability

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, mortality and others are required to be estimated.

(2) Impairment of non-financial assets

The Group is assessing whether there is any indication that an asset may be impaired at the end of each reporting period. The Group 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.

(3) Provisions

Provisions are recognized when the Group 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 Group'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.

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4. Financial risk management

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

(1) Market risk

1) Foreign currency risk

Foreign currency risk arises when recognized assets and liabilities are stated in foreign currency other than functional currency. The book value of the Group's monetary assets and liabilities denominated in foreign currencies, which represents the maximum exposure to foreign currency risk as of December 31, 2022, 2021 and 2020 are as follows:

		2022					Total
		USD	EUR	JPY	CNY	Others(*1)	
Financial assets	₩	9,793,537	3,367,470	8,532	426,958	186,801	13,783,298
Financial liabilities		(201,722)	(5,914)	-	-	-	(207,636)
Net assets	₩	9,591,815	3,361,556	8,532	426,958	186,801	13,575,662

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

		2021				Total
		USD	EUR	JPY	CNY	
Financial assets	₩	3,343,402	2,644,919	223,659	-	6,211,980
Financial liabilities		(1,541)	(87,176)	-	(931)	(89,648)
Net assets (liabilities)	₩	3,341,861	2,557,743	223,659	(931)	6,122,332

		2020			Total
		USD	EUR	JPY	
Financial assets	₩	945,252	1,871,248	655,290	3,471,790
Financial liabilities		-	-	-	-
Net assets	₩	945,252	1,871,248	655,290	3,471,790

The sensitivity analysis on the Group's income before tax for the period, assuming a 10% increase and decrease in currency exchange rates, as of December 31, 2022, 2021 and 2020 is as follows:

		2022		2021		2020	
		10% increase	10% decrease	10% increase	10% decrease	10% increase	10% decrease
Loss before tax impact	₩	(1,357,566)	1,357,566	(612,233)	612,233	(347,179)	347,179

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 Group 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.

Doosan Robotics Inc. and Subsidiary
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4. Financial risk management, Continued

Floating rate financial assets and liabilities exposed to interest rate risk as of December 31, 2022, 2021 and 2020 are as follows:

<i>(In thousands of won)</i>		<u>2022</u>	<u>2021</u>	<u>2020</u>
Financial assets	₩	2,176,792	1,280,836	577,555

The sensitivity analysis on the Group's income before tax for the period, assuming a 100bp increase and decrease in interest rates, as of December 31, 2022, 2021 and 2020 is as follows:

<i>(In thousands of won)</i>		<u>2022</u>		<u>2021</u>		<u>2020</u>	
		<u>100bp increase</u>	<u>100bp decrease</u>	<u>100bp increase</u>	<u>100bp decrease</u>	<u>100bp increase</u>	<u>100bp decrease</u>
Loss before tax impact	₩	(21,768)	21,768	(12,808)	12,808	(5,776)	5,776

(2) Credit risk

The Group 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 mainly arises from trade and other receivables. The Group 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 carrying amount of financial assets represents the Group's maximum exposure. The maximum exposure to credit risk as of December 31, 2022, 2021 and 2020 are as follows:

<i>(In thousands of won)</i>		<u>2022</u>	<u>2021</u>	<u>2020</u>
Financial assets as measured at amortized cost :				
Cash and cash equivalents	₩	7,429,942	4,389,647	2,620,608
Short-term financial instruments (*1)		688,778	-	-
Trade receivables		10,757,928	8,558,463	3,385,434
Other receivables		412,429	22,133	81,910
Guarantee deposits		1,383,092	604,722	558,722
Financial assets as measured at FVTPL :				
Long-term investments in securities		2,400,000	-	-
Total	₩	<u>23,072,169</u>	<u>13,574,965</u>	<u>6,646,674</u>

(*1) The Group has established the right of pledge for outstanding stand by letter of credit.

The Group's receivables' aging analysis as of December 31, 2022, 2021 and 2020 are as follows:

<i>(In thousands of won)</i>		<u>2022</u>				
		<u>Receivables assessed for impairment individually or on a collective basis</u>				
		<u>Before maturity</u>	<u>0-3 months</u>	<u>3-12 months</u>	<u>More than 12 months</u>	<u>Total</u>
Trade receivables	₩	144,668	9,165,853	1,499,630	192,621	11,002,772
Other receivables		408,738	-	-	-	408,738
Accrued income		3,691	-	-	-	3,691
Total	₩	<u>557,097</u>	<u>9,165,853</u>	<u>1,499,630</u>	<u>192,621</u>	<u>11,415,201</u>

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4. Financial risk management, Continued

(In thousands of won)

		2021				
		Receivables assessed for impairment individually or on a collective basis				
		Before maturity	0-3 months	3-12 months	More than 12 months	Total
Trade receivables	₩	116,568	8,354,886	157,749	162,412	8,791,615
Other receivables		22,037	-	-	-	22,037
Accrued income		96	-	-	-	96
Total	₩	<u>138,701</u>	<u>8,354,886</u>	<u>157,749</u>	<u>162,412</u>	<u>8,813,748</u>

(In thousands of won)

		2020				
		Receivables assessed for impairment individually or on a collective basis				
		Before maturity	0-3 months	3-12 months	More than 12 months	Total
Trade receivables	₩	1,522,790	1,427,831	291,382	143,431	3,385,434
Other receivables		81,210	-	-	630	81,840
Accrued income		70	-	-	-	70
Total	₩	<u>1,604,070</u>	<u>1,427,831</u>	<u>291,382</u>	<u>144,061</u>	<u>3,467,344</u>

(3) Liquidity risk

The Group 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.

A summary of expected maturity for the Group's financial liabilities, etc. as of December 31, 2022, 2021 and 2020 are as follows:

(In thousands of won)

		2022			
		Book value	Nominal cash flows according to contract		
			Total	Less than 1 year	More than 1 years
Principal on financial liabilities	₩	11,637,990	12,857,168	8,680,242	4,176,926

(In thousands of won)

		2021			
		Book value	Nominal cash flows according to contract		
			Total	Less than 1 year	More than 1 years
Principal on financial liabilities	₩	9,305,047	10,203,210	8,016,097	2,187,113

(In thousands of won)

		2020			
		Book value	Nominal cash flows according to contract		
			Total	Less than 1 year	More than 1 years
Principal on financial liabilities	₩	9,047,481	10,218,644	7,618,485	2,600,159
Interest on financial liabilities		-	73,512	73,512	-
Total	₩	<u>9,047,481</u>	<u>10,292,156</u>	<u>7,691,997</u>	<u>2,600,159</u>

Doosan Robotics Inc. and Subsidiary
Notes to the Consolidated Financial Statements, Continued
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4. Financial risk management, Continued

(4) Capital risk

The objective of the Group'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 Group 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, 2022, 2021 and 2020 are as follows:

<i>(In thousands of won)</i>	2022	2021	2020
Total liabilities (A)	₩ 19,853,043	13,942,990	13,192,459
Total equity (B)	<u>42,765,362</u>	<u>15,502,080</u>	<u>9,139,203</u>
Debt-to-equity ratio (A/B)	<u>46.42%</u>	<u>89.94%</u>	<u>144.35%</u>

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5. Trade and other receivables

(1) Trade and other receivables as of December 31, 2022, 2021 and 2020 are as follows:

(In thousands of won)

		2022		
		Gross	Allowance for doubtful accounts	Book value
Current assets:				
Trade receivables	₩	10,883,623	(239,229)	10,644,394
Other receivables		408,738	-	408,738
Accrued income		3,691	-	3,691
Subtotal		<u>11,296,052</u>	<u>(239,229)</u>	<u>11,056,823</u>
Non-current assets:				
Long-term trade receivables (*1)		114,432	(898)	113,534
Total	₩	<u>11,410,484</u>	<u>(240,127)</u>	<u>11,170,357</u>

(*1) Includes present value discount in the amount of ₩4,717 thousand.

(In thousands of won)

		2021		
		Gross	Allowance for doubtful accounts	Book value
Current assets:				
Trade receivables	₩	8,791,615	(233,152)	8,558,463
Other receivables		22,037	-	22,037
Accrued income		96	-	96
Total	₩	<u>8,813,748</u>	<u>(233,152)</u>	<u>8,580,596</u>

(In thousands of won)

		2020		
		Gross	Allowance for doubtful accounts	Book value
Current assets:				
Trade receivables	₩	3,385,434	-	3,385,434
Other receivables		81,840	-	81,840
Accrued income		70	-	70
Total	₩	<u>3,467,344</u>	<u>-</u>	<u>3,467,344</u>

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5. Trade and other receivables, Continued

(2) Changes in allowance for doubtful accounts for the years ended December 31, 2022 and 2021 are as follows:

(In thousands of won)

	2022		
	January 1	Provision for allowance	December 31
Current assets:			
Trade receivables	₩ 233,152	6,077	239,229
Non-current assets:			
Long-term trade receivables	-	898	898
Total	₩ 233,152	6,975	240,127

(In thousands of won)

	2021		
	January 1	Provision for allowance	December 31
Current assets:			
Trade receivables	₩ -	233,152	233,152

6. Other assets

Other assets as of December 31, 2022, 2021 and 2020 are as follows:

(In thousands of won)

	2022		2021	2020
	Current	Non-current	Current	Current
Prepayments	₩ 4,531,685	-	615,013	89,774
Prepaid expenses	301,516	261,884	78,656	99,386
Prepaid value added tax	1,299,786	-	279,653	343,756
Others	2,666	-	2,666	2,666
Total	₩ 6,135,653	261,884	975,988	535,582

7. Inventories

Inventories as of December 31, 2022, 2021 and 2020 are as follows:

(In thousands of won)

	2022		2021	2020
	Current	Non-current	Current	Current
Merchandise	₩ 1,144,648	-	333,282	157,320
Finished goods	8,972,836	-	2,873,092	1,893,641
Semi-finished goods	39,174	-	7,652	16,592
Work-in-process	445,983	-	130,269	162,593
Raw materials	4,003,939	-	2,577,946	3,667,826
Deduction :				
Inventory valuation allowance	(1,215,440)	-	(306,986)	(574,914)
Total	₩ 13,391,140	-	5,615,255	5,323,058

Losses on (Reversal of) inventory valuation recognized within the cost of sales amounted to ₩908,454 thousand, ₩(267,928) thousand and ₩542,293 thousand for the years ended December 31, 2022, 2021 and 2020 respectively.

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8. Categories of financial instruments

(1) Categories of financial instruments as of December 31, 2022, 2021 and 2020 are as follows:

(In thousands of won)

		2022			
		Financial assets as measured at FVTPL	Financial assets as measured at amortized cost	Carrying amounts	Fair value
Financial assets :					
Cash and cash equivalents	₩	-	7,429,942	7,429,942	7,429,942
Short and long-term financial instruments		-	688,778	688,778	688,778
Long-term investments in securities		2,400,000	-	2,400,000	2,400,000
Trade receivables		-	10,757,928	10,757,928	10,757,928
Other receivables		-	412,429	412,429	412,429
Guarantee deposits		-	1,383,092	1,383,092	1,383,092
Total	₩	<u>2,400,000</u>	<u>20,672,169</u>	<u>23,072,169</u>	<u>23,072,169</u>
Financial liabilities :					
Trade payables		-	3,874,596	3,874,596	3,874,596
Other payables		-	3,516,537	3,516,537	3,516,537
Lease liabilities		-	4,246,857	4,246,857	4,246,857
Total	₩	<u>-</u>	<u>11,637,990</u>	<u>11,637,990</u>	<u>11,637,990</u>

(In thousands of won)

		2021		
		Financial assets as measured at amortized cost	Carrying amounts	Fair value
Financial assets :				
Cash and cash equivalents	₩	4,389,647	4,389,647	4,389,647
Trade receivables		8,558,463	8,558,463	8,558,463
Other receivables		22,133	22,133	22,133
Guarantee deposits		604,722	604,722	604,722
Total	₩	<u>13,574,965</u>	<u>13,574,965</u>	<u>13,574,965</u>
Financial liabilities :				
Trade payables		5,036,009	5,036,009	5,036,009
Other payables		2,427,041	2,427,041	2,427,041
Lease liabilities		1,841,997	1,841,997	1,841,997
Total	₩	<u>9,305,047</u>	<u>9,305,047</u>	<u>9,305,047</u>

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8. Categories of financial instruments, Continued

(In thousands of won)

	2020		
	Financial assets as measured at amortized cost	Carrying amounts	Fair value
Financial assets :			
Cash and cash equivalents	₩ 2,620,608	2,620,608	2,620,608
Trade receivables	3,385,434	3,385,434	3,385,434
Other receivables	81,910	81,910	81,910
Guarantee deposits	558,722	558,722	558,722
Total	₩ 6,646,674	6,646,674	6,646,674
Financial liabilities :			
Trade payables	3,216,650	3,216,650	3,216,650
Other payables	899,876	899,876	899,876
Lease liabilities	1,930,955	1,930,955	1,930,955
Short-term borrowings	3,000,000	3,000,000	3,000,000
Total	₩ 9,047,481	9,047,481	9,047,481

(2) The level of fair value measurements of financial instruments as of December 31, 2022 is as follows:

(In thousands of won)

	2022			
	Level 1	Level 2	Level 3	Total
Financial assets measured at fair value:				
Measured at FVTPL	₩ -	-	2,400,000	2,400,000

The definition of the level of hierarchy of fair value of financial instruments is as follows:

	Significance of input factor
Level 1:	Unadjusted quoted 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)

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8. Categories of financial instruments, Continued

(3) Gain or loss by categories of financial instruments for the years ended December 31, 2022, 2021 and 2020 are as follows:

(In thousands of won)

		2022			
		Gain or loss			
		Interest income (expense)	Impairment loss	Gain or loss on disposal	Gain or loss on foreign exchange
Financial assets:					
Measured at amortized cost	₩	118,021	6,975	-	225,570
Measured at FVTPL		-	-	271,543	-
Financial liabilities:					
Measured at amortized cost	₩	(545,827)	-	-	(5,859)

(In thousands of won)

		2021			
		Gain or loss			
		Interest income (expense)	Impairment loss	Gain or loss on disposal	Gain or loss on foreign exchange
Financial assets:					
Measured at amortized cost	₩	6,845	233,152	-	70,574
Financial liabilities:					
Measured at amortized cost	₩	(412,180)	-	-	(399)

(In thousands of won)

		2020			
		Gain or loss			
		Interest income (expense)	Impairment loss	Gain or loss on disposal	Gain or loss on foreign exchange
Financial assets:					
Measured at amortized cost	₩	15,287	-	-	(131,064)
Financial liabilities:					
Measured at amortized cost	₩	(369,366)	-	-	(5,341)

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9. Investments in associates

Details of share of investment in associates as of December 31, 2022, 2021 and 2020 are as follows:

<i>(In thousands of won)</i>	Percentage of ownership (%)	Location	2022	2021	2020
Associates:					
Folletto Robotics Co., Ltd. (*1)	7.36	KOREA	₩ 2,400,000	-	-

(*1) Although the Group has significant influence in the investee company by being able to participate in its board of directors, management determined that the redeemable convertible preferred shares do not grant the Group access to the benefits linked to the ownership stake in the investee company. Therefore, the Group has classified them as financial assets measured at fair value through profit or loss, according to the Korean Accounting Standard No. 1109 'Financial Instruments'.

10. Property, plant and equipment

Changes in property, plant and equipment for the years ended December 31, 2022, 2021 and 2020 are as follows:

<i>(In thousands of won)</i>	2022					
	Machinery	Vehicles	Tools	Office Equipment	Construction in progress	Total
As of January 1, 2022	₩ 2,683,946	1,650	1,617,124	1,291,780	103,500	5,698,000
Acquisition	1,037,499	-	212,197	439,763	3,149,203	4,838,662
Transfer (*1)	896,385	-	521,718	-	(947,778)	470,325
Disposals	(46,957)	-	(751)	(447)	-	(48,155)
Depreciation	(610,172)	(1,649)	(699,625)	(338,220)	-	(1,649,666)
Others (*2)	-	-	-	(410)	(13,149)	(13,559)
As of December 31, 2022	₩ 3,960,701	1	1,650,663	1,392,466	2,291,776	9,295,607
- Acquisition cost	₩ 5,818,584	9,000	4,499,375	3,193,642	2,291,776	15,812,377
- Accumulated depreciation	(1,857,883)	(8,999)	(2,848,712)	(1,801,176)	-	(6,516,770)

(*1) Includes the amount of ₩470,325 thousand that has been transferred from inventory assets to property, plant and equipment.

(*2) Changes due to exchange rate difference and others.

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10. Property, plant and equipment, Continued

(In thousands of won)

	2021					
	<u>Machinery</u>	<u>Vehicles</u>	<u>Tools</u>	<u>Office Equipment</u>	<u>Construction in progress</u>	<u>Total</u>
As of January 1, 2021	₩ 2,439,532	3,450	2,016,158	1,523,924	94,600	6,077,664
Acquisition	265,573	-	143,010	83,811	170,370	662,764
Transfer (*1)	408,017	-	158,500	-	(161,470)	405,047
Disposals	-	-	(1)	(3)	-	(4)
Depreciation	(429,176)	(1,800)	(700,543)	(315,952)	-	(1,447,471)
As of December 31, 2021	₩ <u>2,683,946</u>	<u>1,650</u>	<u>1,617,124</u>	<u>1,291,780</u>	<u>103,500</u>	<u>5,698,000</u>
- Acquisition cost	₩ 3,956,151	9,000	3,797,835	2,758,918	103,500	10,625,404
- Accumulated depreciation	(1,272,205)	(7,350)	(2,180,711)	(1,467,138)	-	(4,927,404)
(*1) Includes the amount of ₩408,017 thousand that has been transferred from inventory assets to property, plant and equipment.						

(In thousands of won)

	2020					
	<u>Machinery</u>	<u>Vehicles</u>	<u>Tools</u>	<u>Office Equipment</u>	<u>Construction in progress</u>	<u>Total</u>
As of January 1, 2020	₩ 2,014,883	5,250	1,095,789	1,824,035	-	4,939,957
Acquisition	251,213	-	624,070	28,824	1,591,788	2,495,895
Transfer	527,050	-	876,338	-	(1,497,188)	(93,800)
Disposals	(13,600)	-	(6,689)	(284)	-	(20,573)
Depreciation	(340,014)	(1,800)	(573,350)	(328,651)	-	(1,243,815)
As of December 31, 2020	₩ <u>2,439,532</u>	<u>3,450</u>	<u>2,016,158</u>	<u>1,523,924</u>	<u>94,600</u>	<u>6,077,664</u>
- Acquisition cost	₩ 3,282,561	9,000	3,505,436	2,677,130	94,600	9,568,727
- Accumulated depreciation	(843,029)	(5,550)	(1,489,278)	(1,153,206)	-	(3,491,063)

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11. Intangible assets

Changes in intangible assets for the years ended December 31, 2022, 2021 and 2020 are as follows:

(In thousands of won)

	2022			
	Industrial property rights	Development costs	Other intangible assets	Total
As of January 1, 2022	₩ 170,558	586,845	1,298,705	2,056,108
Acquisition	29,181	4,964,102	272,714	5,265,997
Amortization	(26,660)	(306,180)	(311,841)	(644,681)
As of December 31, 2022	₩ 173,079	5,244,767	1,259,578	6,677,424
- Acquisition cost	₩ 268,750	13,964,828	2,697,110	16,930,688
- Accumulated amortization	(95,671)	(3,661,785)	(1,437,532)	(5,194,988)
- Accumulated impairment loss	-	(5,058,276)	-	(5,058,276)

(In thousands of won)

	2021			
	Industrial property rights	Development costs	Other intangible assets	Total
As of January 1, 2021	₩ 115,063	893,025	1,009,309	2,017,397
Acquisition	74,138	-	553,821	627,959
Transfer	-	-	2,970	2,970
Amortization	(18,643)	(306,180)	(267,395)	(592,218)
As of December 31, 2021	₩ 170,558	586,845	1,298,705	2,056,108
- Acquisition cost	₩ 239,569	9,000,725	2,424,397	11,664,691
- Accumulated amortization	(69,011)	(3,355,604)	(1,125,692)	(4,550,307)
- Accumulated impairment loss	-	(5,058,276)	-	(5,058,276)

(In thousands of won)

	2020			
	Industrial property rights	Development costs	Other intangible assets	Total
As of January 1, 2020	₩ 122,928	1,199,205	1,168,658	2,490,791
Acquisition	8,339	-	51,725	60,064
Transfer	-	-	93,800	93,800
Amortization	(16,204)	(306,180)	(304,874)	(627,258)
As of December 31, 2020	₩ 115,063	893,025	1,009,309	2,017,397
- Acquisition cost	₩ 165,431	9,000,726	1,867,605	11,033,762
- Accumulated amortization	(50,368)	(3,049,425)	(858,296)	(3,958,089)
- Accumulated impairment loss	-	(5,058,276)	-	(5,058,276)

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12. Right-of-use assets

(1) Changes in the right-of-use assets by type of underlying asset for the years ended December 31, 2022, 2021 and 2020 are as follows:

(In thousands of won)

	2022		
	Buildings	Vehicles	Total
As of January 1, 2022	₩ 1,427,056	96,650	1,523,706
Acquisition	3,047,765	147,556	3,195,321
Depreciation	(925,091)	(59,077)	(984,168)
As of December 31, 2022	₩ 3,549,730	185,129	3,734,859
- Acquisition cost	₩ 5,087,678	253,051	5,340,729
- Accumulated depreciation	(1,537,948)	(67,922)	(1,605,870)

(In thousands of won)

	2021		
	Buildings	Vehicles	Total
As of January 1, 2021	₩ 1,633,587	47,593	1,681,180
Acquisition	87,274	84,405	171,679
Depreciation	(264,299)	(28,974)	(293,273)
Disposals	(11,855)	(6,374)	(18,229)
Others	(17,651)	-	(17,651)
As of December 31, 2021	₩ 1,427,056	96,650	1,523,706
- Acquisition cost	₩ 2,127,187	133,555	2,260,742
- Accumulated depreciation	(700,131)	(36,905)	(737,036)

(In thousands of won)

	2020		
	Buildings	Vehicles	Total
As of January 1, 2020	₩ 1,891,986	69,521	1,961,507
Acquisition	17,536	21,089	38,625
Depreciation	(275,935)	(37,605)	(313,540)
Disposals	-	(5,412)	(5,412)
As of December 31, 2020	₩ 1,633,587	47,593	1,681,180
- Acquisition cost	₩ 2,158,715	115,441	2,274,156
- Accumulated depreciation	(525,128)	(67,848)	(592,976)

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12. Right-of-use assets, Continued

(2) Gain or loss by lease for the years ended December 31, 2022, 2021 and 2020 are as follows:

(In thousands of won)

	2022		
	Buildings	Vehicles	Total
Depreciation	₩ 925,091	59,077	984,168
Interest expense	526,892	18,860	545,752

The total cash outflow of the lease is ₩1,336,213 thousand for the year ended December 31, 2022.

(In thousands of won)

	2021		
	Buildings	Vehicles	Total
Depreciation	₩ 264,299	28,974	293,273
Interest expense	264,432	6,492	270,924

The total cash outflow of the lease is ₩493,361 thousand for the year ended December 31, 2021.

(In thousands of won)

	2020		
	Buildings	Vehicles	Total
Depreciation	₩ 275,935	37,605	313,540
Interest expense	298,507	7,750	306,257

The total cash outflow of the lease is ₩509,488 thousand for the year ended December 31, 2020.

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13. Trade payables and other payables

Trade payables and other payables as of December 31, 2022, 2021 and 2020 are as follows:

<i>(In thousands of won)</i>	2022	2021	2020
Trade payables	₩ 3,874,596	5,036,009	3,216,650
Other payables :			
Other Payables	3,396,796	2,200,533	772,795
Accrued expenses	119,741	226,508	127,081
Subtotal	3,516,537	2,427,041	899,876
Total	₩ 7,391,133	7,463,050	4,116,526

14. Borrowings

Short-term borrowings as of December 31, 2022, 2021 and 2020 are as follows:

<i>(In thousands of won)</i>	Annual interest rate (%) as of December 31, 2022	2022	2021	2020
Lender				
Doosan Corp.	-	₩ -	-	3,000,000

15. Provisions

Changes in provisions for the years ended December 31, 2022, 2021 and 2020 are as follows:

<i>(In thousands of won)</i>	2022	2021	2020
As of January 1	₩ 753,864	939,293	798,496
Increase	104,560	77,424	411,674
Utilization	(321,430)	(262,853)	(270,877)
As of December 31	₩ 536,994	753,864	939,293
- Current	₩ 483,679	565,804	939,293
- Non-current	53,315	188,060	-

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16. Lease liabilities

(1) Changes in lease liabilities for the years ended December 31, 2022, 2021 and 2020 are as follows:

<i>(In thousands of won)</i>		2022	2021	2020
As of January 1	₩	1,841,997	1,930,955	2,101,454
Lease contract cancelation		-	(20,549)	(5,893)
Payment of lease		(1,336,213)	(493,361)	(509,488)
Acquisition		3,195,321	171,679	38,625
Interest expense		545,752	270,924	306,257
Others		-	(17,651)	-
As of December 31	₩	<u>4,246,857</u>	<u>1,841,997</u>	<u>1,930,955</u>

(2) Lease liabilities as of December 31, 2022, 2021 and 2020 are as follows:

<i>(In thousands of won)</i>		2022		
		Buildings	Vehicles	Total
Less than 1 year	₩	1,211,569	77,540	1,289,109
2-5 years		4,025,917	151,009	4,176,926
Subtotal		<u>5,237,486</u>	<u>228,549</u>	<u>5,466,035</u>
Deduction: Present value adjustment		(1,184,439)	(34,739)	(1,219,178)
Present value of lease liability	₩	<u>4,053,047</u>	<u>193,810</u>	<u>4,246,857</u>

<i>(In thousands of won)</i>		2021		
		Buildings	Vehicles	Total
Less than 1 year	₩	509,822	43,225	553,047
2-5 years		1,739,214	76,610	1,815,824
More than 5 years		371,289	-	371,289
Subtotal		<u>2,620,325</u>	<u>119,835</u>	<u>2,740,160</u>
Deduction: Present value adjustment		(878,157)	(20,006)	(898,163)
Present value of lease liability	₩	<u>1,742,168</u>	<u>99,829</u>	<u>1,841,997</u>

<i>(In thousands of won)</i>		2020		
		Buildings	Vehicles	Total
Less than 1 year	₩	466,666	35,293	501,959
2-5 years		1,746,474	23,619	1,770,093
More than 5 years		830,066	-	830,066
Subtotal		<u>3,043,206</u>	<u>58,912</u>	<u>3,102,118</u>
Deduction: Present value adjustment		(1,163,533)	(7,630)	(1,171,163)
Present value of lease liability	₩	<u>1,879,673</u>	<u>51,282</u>	<u>1,930,955</u>

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17. Other liabilities

Other liabilities as of December 31, 2022, 2021 and 2020 are as follows:

<i>(In thousands of won)</i>	2022		2021		2020	
	Current	Non-current	Current	Non-current	Current	Non-current
Withholdings	₩ 126,687	-	89,991	-	68,970	-
Accrued expenses	3,221,502	81,958	3,037,820	122,936	2,602,523	126,153
Advance received	2,683,080	-	351,168	-	252,072	-
Unearned revenue	1,595	-	3,046	-	4,259	-
Other long-term employee benefit liabilities	-	172,150	-	191,602	-	151,708
Total	₩ <u>6,032,864</u>	<u>254,108</u>	<u>3,482,025</u>	<u>314,538</u>	<u>2,927,824</u>	<u>277,861</u>

18. Defined benefit liabilities

The Group operates defined benefit plans, and the insurance actuarial valuation of plan assets and the defined benefit obligation is performed by an independent insurance actuarial firm using the projected unit credit method, which is deemed appropriate.

(1) Details of defined benefit assets and liabilities as of December 31, 2022, 2021 and 2020 are as follows:

<i>(In thousands of won)</i>	2022	2021	2020
Present value of defined benefit obligations	₩ 4,528,922	3,646,675	3,469,582
Fair value of plan assets	<u>(3,137,835)</u>	<u>(3,559,157)</u>	<u>(3,515,483)</u>
Net defined benefit liabilities (assets)	₩ <u>1,391,087</u>	<u>87,518</u>	<u>(45,901)</u>

(2) Expenses recognized in consolidated statements of income for the years ended December 31, 2022, 2021 and 2020 are as follows:

<i>(In thousands of won)</i>	2022	2021	2020
Current service cost	₩ 1,024,050	776,006	860,736
Net interest cost (Interest cost – Expected return)	22,286	8,168	22,371
Past service cost	328,156	-	-
Total	₩ <u>1,374,492</u>	<u>784,174</u>	<u>883,107</u>

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18. Defined benefit liabilities, Continued

(3) Changes in net defined benefit liabilities (assets) for the years ended December 31, 2022, 2021 and 2020 are as follows:

(In thousands of won)

	2022		
	Defined benefit liabilities	Plan assets	Net defined benefit liabilities (assets)
As of January 1, 2022	₩ 3,646,675	(3,559,157)	87,518
Profit or loss:			
Current service cost	1,024,050	-	1,024,050
Past service cost	328,156	-	328,156
Interest cost (income)	120,571	(98,285)	22,286
Subtotal	<u>1,472,777</u>	<u>(98,285)</u>	<u>1,374,492</u>
Remeasurement loss (gain) in OCI:			
Actuarial changes arising from changes in demographic assumptions	234	-	234
Actuarial changes arising from changes in financial assumptions	(638,347)	-	(638,347)
Others	531,400	-	531,400
Subtotal	<u>(106,713)</u>	<u>-</u>	<u>(106,713)</u>
Transfer from related parties	101,263	(120)	101,143
Benefit payments	(585,080)	519,727	(65,353)
As of December 31, 2022	<u>₩ 4,528,922</u>	<u>(3,137,835)</u>	<u>1,391,087</u>

(In thousands of won)

	2021		
	Defined benefit liabilities	Plan assets	Net defined benefit liabilities (assets)
As of January 1, 2021	₩ 3,469,582	(3,515,483)	(45,901)
Profit or loss:			
Current service cost	776,006	-	776,006
Interest cost (income)	84,577	(76,409)	8,168
Subtotal	<u>860,583</u>	<u>(76,409)</u>	<u>784,174</u>
Remeasurement loss in OCI:			
Actuarial changes arising from changes in demographic assumptions	195	-	195
Actuarial changes arising from changes in financial assumptions	37,622	-	37,622
Others	133,760	37,710	171,470
Subtotal	<u>171,577</u>	<u>37,710</u>	<u>209,287</u>
Transfer from related parties	179,169	5,654	184,823
Contributions by user directly to plan assets	-	(670,000)	(670,000)
Benefit payments	(1,034,236)	659,371	(374,865)
As of December 31, 2021	<u>₩ 3,646,675</u>	<u>(3,559,157)</u>	<u>87,518</u>

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18. Defined benefit liabilities, Continued

(In thousands of won)

	2020		
	Defined benefit liabilities	Plan assets	Net defined benefit liabilities/assets
As of January 1, 2020	₩ 3,146,138	(2,455,441)	690,697
Profit or loss:			
Current service cost	860,736	-	860,736
Interest cost (income)	64,408	(42,037)	22,371
Subtotal	925,144	(42,037)	883,107
Remeasurement loss (gain) in OCI:			
Actuarial changes arising from changes in demographic assumptions	79,569	-	79,569
Actuarial changes arising from changes in financial assumptions	(218,767)	-	(218,767)
Others	111,065	7,126	118,191
Subtotal	(28,133)	7,126	(21,007)
Transfer from related parties	448,315	(193,447)	254,868
Contributions by user directly to plan assets	-	(1,250,000)	(1,250,000)
Benefit payments	(1,021,882)	418,316	(603,566)
As of December 31, 2020	₩ 3,469,582	(3,515,483)	(45,901)

(4) Assumptions used for actuarial valuation as of December 31, 2022, 2021 and 2020 are as follows:

	2022	2021	2020
Discount rate (%)	5.4	3.1	2.5
Future salary growth rate (%)	Employee: 4.8 Executive: 1.5	Employee: 3.9 Executive: 0.8	Employee: 3.2 Executive: 1.4

(5) Details of plan assets as of December 31, 2022, 2021 and 2020 are as follows:

(In thousands of won)

	2022	2021	2020
Savings deposits and others	₩ 3,137,835	3,559,157	3,515,483

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18. Defined benefit liabilities, Continued

(6) The sensitivity analysis for the significant actuarial assumptions as of December 31, 2022, 2021 and 2020 is as follows:

(In thousands of won)

	2022			
	Discount rate		Salary growth rate	
	1% increase	1% decrease	1% increase	1% decrease
Amount	₩ (364,387)	428,925	427,394	(369,796)
Ratio	(-)8.05%	9.47%	9.44%	(-)8.17%

(In thousands of won)

	2021			
	Discount rate		Salary growth rate	
	1% increase	1% decrease	1% increase	1% decrease
Amount	₩ (359,911)	429,621	421,199	(360,304)
Ratio	(-)9.87%	11.78%	11.55%	(-)9.88%

(In thousands of won)

	2020			
	Discount rate		Salary growth rate	
	1% increase	1% decrease	1% increase	1% decrease
Amount	₩ (345,714)	413,579	404,950	(345,760)
Ratio	(-)9.96%	11.92%	11.67%	(-)9.97%

(7) As of December 31, 2022, the weighted average maturity of defined benefit liabilities is 9.18 years.
The Group expects to pay contributions amounting to ₩1,400,938 thousand in the following year.

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19. Capital stock and capital surplus

(1) Details in capital stock as of December 31, 2022, 2021 and 2020 are as follows:

	<u>2022</u>	<u>2021</u>	<u>2020</u>
Number of shares authorized(In shares)	50,000,000	50,000,000	50,000,000
Number of shares(In shares)	4,861,998	4,420,000	4,140,000
Par value(In won) ₩	5,000	5,000	5,000
Capital stock(In thousands of won) ₩	24,309,990	22,100,000	20,700,000

(2) Details in capital surplus as of December 31, 2022, 2021 and 2020 are as follows:

<i>(In thousands of won)</i>	<u>2022</u>	<u>2021</u>	<u>2020</u>
Paid-in capital in excess of par value ₩	101,092,604	63,575,564	50,985,995

(3) Changes in capital stock and capital surplus for the years ended December 31, 2022, 2021 and 2020 are as follows:

<i>(In thousands of won)</i>	<u>Capital stock</u>	<u>Capital surplus</u>
As of January 1, 2020 ₩	20,700,000	50,985,995
As of December 31, 2020	20,700,000	50,985,995
As of January 1, 2021	20,700,000	50,985,995
Issuance of ordinary shares	1,400,000	12,589,569
As of December 31, 2021	22,100,000	63,575,564
As of January 1, 2022	22,100,000	63,575,564
Issuance of ordinary shares	2,209,990	37,517,040
As of December 31, 2022 ₩	24,309,990	101,092,604

20. Segment information

The Group's operating segment is a component that engages in business activities from which it may earn revenue and incur expenses. The Group identifies a component based on internal reports which are regularly reviewed by the Group's management to make decisions about resources to be allocated to the segment and assess its performance.

The Group engages in single operating segment that manufactures and sells industrial robots, and there is no other operating segment information to be disclosed.

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21. Sales

(1) Sales for the years ended December 31, 2022, 2021 and 2020 are as follows:

<i>(In thousands of won)</i>	<u>2022</u>	<u>2021</u>	<u>2020</u>
Sales of finished goods	₩ 41,216,512	35,403,322	19,375,620
Sales of merchandise	2,611,482	926,243	360,619
Others	1,125,680	650,658	427,769
Total	<u>₩ 44,953,674</u>	<u>36,980,223</u>	<u>20,164,008</u>

(2) Sales by timing of revenue recognition for the years ended December 31, 2022, 2021 and 2020 are as follows:

<i>(In thousands of won)</i>	<u>2022</u>	<u>2021</u>	<u>2020</u>
Transfer at a point in time	₩ 44,953,674	36,980,223	20,164,008

(3) Sales by location of the customers for the years ended December 31, 2022, 2021 and 2020 are as follows:

<i>(In thousands of won)</i>	<u>2022</u>	<u>2021</u>	<u>2020</u>
Domestic	₩ 14,184,080	12,750,160	6,576,201
United States of Americas	10,516,457	6,546,900	3,333,306
Others	20,253,137	17,683,163	10,254,501
Total	<u>₩ 44,953,674</u>	<u>36,980,223</u>	<u>20,164,008</u>

(4) Information about major customers

Customers accounting for 10% or more of the Group's revenue for the years ended December 31, 2022, 2021 and 2020 are as follows:

<i>(In millions of won)</i>	<u>2022</u>	<u>2021</u>	<u>2020</u>
Company A	₩ 4,699	3,154	1,778

22. Expenses classified by nature

Expenses (cost of sales, selling and administrative expenses) classified by nature for the years ended December 31, 2022, 2021 and 2020 are as follows:

<i>(In thousands of won)</i>	<u>2022</u>	<u>2021</u>	<u>2020</u>
Changes in inventories	₩ (7,775,885)	(292,197)	3,734,485
Purchases of raw materials, merchandise and semi-finished goods	31,238,868	21,592,056	8,635,479
Salaries	15,226,542	12,053,225	11,083,695
Depreciation	1,649,666	1,447,471	1,243,815
Amortization	644,681	592,218	627,258
Depreciation of right-of-use assets	984,168	293,273	313,540
Others	16,213,967	8,378,890	8,381,236
Total	<u>₩ 58,182,007</u>	<u>44,064,936</u>	<u>34,019,508</u>

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23. Selling and administrative expenses

Selling and administrative expenses for the years ended December 31, 2022, 2021 and 2020 are as follows:

<i>(In thousands of won)</i>	2022	2021	2020
Salaries	₩ 10,066,225	8,543,643	8,399,217
Severance and retirement benefits	1,188,640	595,540	728,457
Share based payment	100,483	-	-
Employee welfare benefits	2,281,351	1,513,948	1,438,659
Travel	1,660,973	449,427	251,557
Communication	44,308	35,754	32,531
Utility	64,198	61,900	52,305
Publication	16,148	13,799	12,621
Office supplies	122,260	38,775	23,762
Supplies	61,267	27,367	36,762
Taxes and dues	170,957	156,139	123,968
Rents	42,650	25,033	23,251
Depreciation	546,923	451,801	560,991
Amortization	328,279	275,044	312,193
Depreciation of right-of-use assets	899,683	210,259	228,320
Repairs	7,192	36,350	1,900
Outsourcing	554,535	626,324	648,081
Commissions	2,444,861	1,645,065	1,577,574
Bad debt expenses	6,975	233,152	-
Insurance	123,921	100,081	43,761
Entertainment	54,210	19,279	4,133
Advertising	2,800,346	422,711	644,628
Vehicle maintenance	28,117	18,829	18,245
Research and development	859,317	715,216	2,407,172
Freight	1,896,954	1,799,416	396,438
Others	1,101,095	452,239	338,579
Total	₩ <u>27,471,868</u>	<u>18,467,091</u>	<u>18,305,105</u>

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24. Finance income and expenses

Finance income and expenses for the years ended December 31, 2022, 2021 and 2020 are as follows:

<i>(In thousands of won)</i>	2022	2021	2020
Finance income :			
Interest income	₩ 118,021	6,845	15,287
Gain on foreign currency transaction	545,530	200,766	125,362
Gain on foreign currency translation	155,650	39,603	3,618
Subtotal	<u>819,201</u>	<u>247,214</u>	<u>144,267</u>
Finance expenses :			
Interest expenses	545,827	412,180	369,366
Loss on foreign currency transaction	249,391	117,361	144,745
Loss on foreign currency translation	232,078	52,833	120,640
Subtotal	<u>1,027,296</u>	<u>582,374</u>	<u>634,751</u>
Net finance expenses	<u>₩ (208,095)</u>	<u>(335,160)</u>	<u>(490,484)</u>

25. Other non-operating income and expenses

Other non-operating income and expenses for the years ended December 31, 2022, 2021 and 2020 are as follows:

<i>(In thousands of won)</i>	2022	2021	2020
Other non-operating income :			
Gain on disposal of short-term financial instruments	₩ 271,543	-	-
Miscellaneous income	709,849	37,898	86,605
Gain on disposal of right-of-use assets	-	2,321	482
Subtotal	<u>981,392</u>	<u>40,219</u>	<u>87,087</u>
Other non-operating expenses :			
Loss on disposal of property, plant and equipment	48,156	4	6,794
Donations	36,000	-	13,604
Miscellaneous loss	8,988	37,747	173,522
Subtotal	<u>93,144</u>	<u>37,751</u>	<u>193,920</u>
Net other non-operating income(expenses)	<u>₩ 888,248</u>	<u>2,468</u>	<u>(106,833)</u>

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26. Income tax expense

(1) The component of income tax expense for the years ended December 31, 2022, 2021 and 2020 are as follows:

<i>(In thousands of won)</i>	<u>2022</u>	<u>2021</u>	<u>2020</u>
Current income tax expense	₩ -	-	-
Tax effect of temporary difference	-	-	-

(2) Changes in deferred tax assets for the years ended December 31, 2022, 2021 and 2020 are as follows:

<i>(In thousands of won)</i>	<u>2022</u>			
	<u>January 1</u>	<u>Changes</u>		<u>December 31</u>
		<u>Profit or loss</u>	<u>Equity</u>	
Deductible (taxable) temporary differences :				
Provision for retirement and severance benefits	₩ 77,162	5,835	22,410	105,407
Depreciation	293,758	(227,745)	-	66,013
Accrued expenses	779,762	(67,948)	-	711,814
Accrued income	(21)	(106)	-	(127)
Provisions	263,960	120,988	-	384,948
Right-of-use assets	(335,215)	(449,105)	-	(784,320)
Lease liabilities	405,239	486,601	-	891,840
Non-current accrued expenses	-	21,101	-	21,101
Subtotal	<u>1,484,645</u>	<u>(110,379)</u>	<u>22,410</u>	<u>1,396,676</u>
Deferred accumulated deficit	13,855,361	1,745,285	-	15,600,646
Tax credit carried forward	2,926,956	101,368	-	3,028,324
Total	<u>₩ 18,266,962</u>	<u>1,736,274</u>	<u>22,410</u>	<u>20,025,646</u>
Adjustment : Deferred tax assets (*1)	<u>(18,266,962)</u>	<u>(1,736,274)</u>	<u>(22,410)</u>	<u>(20,025,646)</u>
Net total	<u>₩ -</u>	<u>-</u>	<u>-</u>	<u>-</u>

(*1) The amount of deductible temporary differences (tax-effected) for which no deferred tax asset is recognized in the statements of financial position as of December 31, 2022 is as follows:

<i>(In thousands of won)</i>	<u>2022</u>
Deductible temporary differences	₩ 1,396,676
Deferred accumulated deficit	15,600,646
Tax credit carried forward	<u>3,028,324</u>
Total	<u>₩ 20,025,646</u>

Doosan Robotics Inc. and Subsidiary
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2022, 2021 and 2020

26. Income tax expense, Continued

(In thousands of won)

	2021			
	January 1	Changes		December 31
		Profit or loss	Equity	
Deductible temporary differences :				
Provision for retirement and severance benefits	₩ 78,450	(47,331)	46,043	77,162
Depreciation	612,910	(319,152)	-	293,758
Accrued expenses	661,410	118,352	-	779,762
Accrued income	(15)	(6)	-	(21)
Provisions	333,126	(69,166)	-	263,960
Right-of-use assets	(369,860)	34,645	-	(335,215)
Lease liabilities	424,810	(19,571)	-	405,239
Subtotal	<u>1,740,831</u>	<u>(302,229)</u>	<u>46,043</u>	<u>1,484,645</u>
Deferred accumulated deficit	11,947,849	1,907,512	-	13,855,361
Tax credit carried forward	2,839,075	87,881	-	2,926,956
Total	<u>₩ 16,527,755</u>	<u>1,693,164</u>	<u>46,043</u>	<u>18,266,962</u>
Adjustment : Deferred tax assets(*1)	<u>(16,527,755)</u>	<u>(1,693,164)</u>	<u>(46,043)</u>	<u>(18,266,962)</u>
Net total	<u>₩ -</u>	<u>-</u>	<u>-</u>	<u>-</u>

(*1) The amount of deductible temporary differences (tax-effected) for which no deferred tax asset is recognized in the statements of financial position as of December 31, 2021 is as follows:

(In thousands of won)

	2021
Deductible temporary differences	₩ 1,484,645
Deferred accumulated deficit	13,855,361
Deferred tax credit carried forward	<u>2,926,956</u>
Total	<u>₩ 18,266,962</u>

Doosan Robotics Inc. and Subsidiary
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2022, 2021 and 2020

26. Income tax expense, Continued

(In thousands of won)

	2020			
	January 1	Changes		December 31
		Profit or loss	Equity	
Deductible temporary differences :				
Provision for retirement and severance benefits	₩ 163,848	(80,777)	(4,621)	78,450
Depreciation	916,257	(303,347)	-	612,910
Accrued expenses	1,528,446	(867,036)	-	661,410
Accrued income	(6,984)	6,969	-	(15)
Provisions	352,004	(18,878)	-	333,126
Right-of-use assets	(431,532)	61,672	-	(369,860)
Lease liabilities	462,320	(37,510)	-	424,810
Subtotal	<u>2,984,359</u>	<u>(1,238,907)</u>	<u>(4,621)</u>	<u>1,740,831</u>
Deferred accumulated deficit	8,746,674	3,201,175	-	11,947,849
Deferred tax credit carried forward	322,309	2,516,766	-	2,839,075
Total	<u>₩ 12,053,342</u>	<u>4,479,034</u>	<u>(4,621)</u>	<u>16,527,755</u>
Adjustment : Deferred tax assets(*1)	<u>(12,053,342)</u>	<u>(4,479,034)</u>	<u>4,621</u>	<u>(16,527,755)</u>
Net total	<u>₩ -</u>	<u>-</u>	<u>-</u>	<u>-</u>

(*1) The amount of deductible temporary differences (tax-effected) for which no deferred tax asset is recognized in the statements of financial position as of December 31, 2020 is as follows:

(In thousands of won)

	2020
Deductible temporary differences	₩ 1,740,831
Deferred accumulated deficit	11,947,849
Deferred tax credit carried forward	<u>2,839,075</u>
Total	<u>₩ 16,527,755</u>

(3) The future realizability of deferred tax assets related to corporate income tax is evaluated taking into account various factors such as the company's performance, overall economic environment and industry outlook, expected future earnings, the deductible amount and the deductible period of carried-forward tax losses. The Group periodically reviews these factors and has determined that it is not probable that any of the temporary differences for deductible differences as of December 31, 2022, 2021 and 2020 could be realizable. Therefore, deferred tax assets have not been recognized.

Doosan Robotics Inc. and Subsidiary
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2022, 2021 and 2020

27. Loss per share

(1) Basic loss per share for the years ended December 31, 2022, 2021 and 2020 are as follows:

<i>(In won)</i>	<u>2022</u>	<u>2021</u>	<u>2020</u>
Loss for the period attributable to the owners of the Company	₩ 12,548,180,138	7,417,405,631	14,452,816,798
Weighted-average number of ordinary shares at the end of period	<u>4,837,779 shares</u>	<u>4,287,178 shares</u>	<u>4,140,000 shares</u>
Basic loss per share	₩ <u>2,594</u>	<u>1,730</u>	<u>3,491</u>

(2) Weighted-average number of ordinary shares for the years ended December 31, 2022, 2021 and 2020 are as follows:

<i>(In shares)</i>	<u>2022</u>			<u>Weighted-average number of shares</u>
	<u>Date</u>	<u>Issued ordinary shares</u>	<u>Number of days</u>	
Issued ordinary shares at the beginning of the period	2022.01.01	4,420,000	365/365	4,420,000
Issuance of ordinary shares	2022.01.21	<u>441,998</u>	345/365	<u>417,779</u>
Total		<u>4,861,998</u>		<u>4,837,779</u>

<i>(In shares)</i>	<u>2021</u>			<u>Weighted-average number of shares</u>
	<u>Date</u>	<u>Issued ordinary shares</u>	<u>Number of days</u>	
Issued ordinary shares at the beginning of the period	2021.01.01	4,140,000	365/365	4,140,000
Issuance of ordinary shares	2021.02.18	90,000	317/365	78,164
Issuance of ordinary shares	2021.06.18	70,000	197/365	37,781
Issuance of ordinary shares	2021.09.28	<u>120,000</u>	95/365	<u>31,233</u>
Total		<u>4,420,000</u>		<u>4,287,178</u>

<i>(In shares)</i>	<u>2020</u>			<u>Weighted-average number of shares</u>
	<u>Date</u>	<u>Issued ordinary shares</u>	<u>Number of days</u>	
Issued ordinary shares at the beginning of the period	2020.01.01	<u>4,140,000</u>	366/366	<u>4,140,000</u>
Total		<u>4,140,000</u>		<u>4,140,000</u>

The Group does not hold potential ordinary shares that have a dilutive effect, so diluted loss per share is equal to basic loss per share.

Doosan Robotics Inc. and Subsidiary
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2022, 2021 and 2020

28. Related party transactions

(1) Related parties

Details of related parties as of December 31, 2022, 2021 and 2020 are as follows:

Relationship	Related party
Parent	Doosan Corp.
Associates	Folletto Robotics Co., Ltd.(*1)
Other related parties	Doosan Cuvex Co., Ltd., Oricom Inc., Doosan Business Research Institute, Doosan Credit Union, Doosan Industrial Vehicle Co., Ltd., Chung-Ang University Hospital, Bundang Doosan Tower Tenant Association and others

(*1) Newly acquired in 2022,

(2) Significant transactions with related parties

Significant transactions (excluding financial and investment) with related parties for the years ended December 31, 2022, 2021 and 2020 are as follows:

(In thousands of won)

		2022			
Relationship	Related parties	Sales	Other income	Purchases	Other expenses
Parent	Doosan Corp.	₩ 291,564	401	-	2,284,322
Associates	Folletto Robotics Co., Ltd.	720,637	-	2,829,197	10,544
Other related parties	Doosan Cuvex Co., Ltd.	-	-	-	133,178
	Oricom Inc.	2,000	-	-	1,109,421
	Chung-Ang University Hospital	-	-	-	24,860
	Doosan Business Research Institute	-	-	-	329,343
	Doosan Credit Union	-	-	-	323,242
	Doosan Industrial Vehicle Co., Ltd.	-	-	-	24,520
	Bundang Doosan Tower Tenant Association	-	-	-	1,153,440
	Total	₩ 1,014,201	401	2,829,197	5,392,870

(In thousands of won)

		2021			
Relationship	Related parties	Sales	Other income	Purchases	Other expenses
Parent	Doosan Corp.	₩ 295,000	-	-	1,538,406
Other related parties	Doosan Cuvex Co., Ltd.	-	-	-	109,895
	Oricom Inc.	-	-	-	14,114
	Chung-Ang University Hospital	-	-	-	34,400
	Doosan Business Research Institute	59,000	-	-	241,766
	Doosan Credit Union	-	-	-	325,306
	Total	₩ 354,000	-	-	2,263,887

Doosan Robotics Inc. and Subsidiary
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2022, 2021 and 2020

28. Related party transactions, Continued

(In thousands of won)

		2020			
	Related parties	Sales	Other income	Purchases	Other expenses
Parent	Doosan Corp.	₩ 136,393	179	-	1,228,120
Other related parties	Doosan Infracore Co., Ltd.	-	-	-	8,187
	Doosan Cuvex Co., Ltd.	-	-	-	56,292
	Oricom Inc.	-	-	-	14,037
	Chung-Ang University Hospital	-	-	-	40,200
	Doosan Business Research Institute (*1)	-	-	-	260,185
	Potenit Co., Ltd.	47,340	-	-	-
	Total	₩	<u>183,733</u>	<u>179</u>	<u>-</u>

(*1) In 2020, The business name of the entity is changed from DLI Corporation to Doosan Business Research Institute.

(3) Significant balances related to the transactions with related parties

The outstanding receivables and payables arising from the transactions with related parties (excluding dividend and investment) as of December 31, 2022, 2021 and 2020 are as follows:

(In thousands of won)

		2022				
	Related parties	Trade receivables	Other receivables	Trade payables	Other payables	
Parent	Doosan Corp.	₩ 119,149	-	-	561,497	
Associates	Folletto Robotics Co., Ltd.	318,000	-	83,197	-	
Other related parties	Doosan Cuvex Co., Ltd.	-	162,500	-	12,037	
	Doosan Business Research Institute	-	-	-	20,467	
	Bundang Doosan Tower Tenant Association	-	765,287	-	623	
	Oricom Inc.	-	-	-	3,531	
	Chung-Ang University Hospital	-	-	-	11,480	
	Total	₩	<u>437,149</u>	<u>927,787</u>	<u>83,197</u>	<u>609,635</u>

(In thousands of won)

		2021			
	Related parties	Trade receivables	Other receivables	Trade payables	Other payables
Parent	Doosan Corp.	₩ 194,700	-	-	501,008
Other related parties	Doosan Cuvex Co., Ltd.	-	84,000	-	244
	Doosan Business Research Institute	64,900	-	-	26,951
	Oricom Inc.	-	-	-	11,720
	Chung-Ang University Hospital	-	-	-	13,700
	Total	₩	<u>259,600</u>	<u>84,000</u>	<u>-</u>

Doosan Robotics Inc. and Subsidiary
Notes to the Consolidated Financial Statements, Continued
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28. Related party transactions, Continued

(In thousands of won)

		2020				
		Trade	Other	Trade	Other	Borrowings
<u>Related parties</u>		<u>receivables</u>	<u>receivables</u>	<u>payables</u>	<u>payables</u>	
Parent	Doosan Corp.	₩ 21,883	-	-	246,428	3,000,000
Other related parties	Doosan Cuvex Co., Ltd.	-	84,000	-	-	-
	Doosan Business Research Institute(*1)	-	17,480	-	1,612	-
	Oricom Inc.	-	-	-	1,224	-
	Potenit Co., Ltd.	46,590	-	-	-	-
	Chung-Ang University Hospital	-	-	-	13,500	-
	Total	₩ 68,473	101,480	-	262,764	3,000,000

(*1) In 2020, The business name of the entity is changed from DLI Corporation to Doosan Business Research Institute.

(4) Financial and investment transactions between the Group and related parties

Financial and investment transactions with related parties for the years ended December 31, 2022, 2021 and 2020 are as follows:

(In thousands of won)

		2022	
		Investments	
<u>Related parties</u>		<u>Increase of capital</u>	<u>Investment</u>
Associates	Folletto Robotics Co., Ltd.	₩ -	2,400,000

(In thousands of won)

		2021			
		Borrowings		Investments	
<u>Related parties</u>		<u>Borrowings</u>	<u>Repayment</u>	<u>Increase of capital</u>	<u>Investment</u>
Parent	Doosan Corp.	₩ -	3,000,000	14,000,000	-

(In thousands of won)

		2020	
		Borrowings	
<u>Related parties</u>		<u>Borrowings</u>	<u>Repayment</u>
Parent	Doosan Corp.	₩ 3,000,000	-

(5) There are no collateral or payment guarantees provided or received to/from related parties for the years ended December 31, 2022, 2021 and 2020.

(6) Key management personnel are standing directors who have authorities and responsibilities for planning, operation and control of the business of the Group. Compensation for key management personnel for the years ended December 31, 2022, 2021 and 2020 consists of following:

(In thousands of won)

	2022	2021	2020
Employee benefits	₩ 1,280,415	1,089,509	981,755
Severance and retirement benefit	471,142	47,915	80,329
Share-based payments	59,041	-	-
Total	₩ 1,810,598	1,137,424	1,062,084

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29. Commitments and contingencies

As of December 31, 2022, the Group is provided with payment guarantees of ₩644,404 thousand from Seoul Guarantee Insurance, including defect guarantees.

30. Consolidated statements of cash flows

(1) Details of cash generated from operation for the years ended December 31, 2022, 2021 and 2020 are as follows:

<i>(In thousands of won)</i>	<u>2022</u>	<u>2021</u>	<u>2020</u>
Loss for the year:	₩ (12,548,180)	(7,417,406)	(14,452,817)
Adjustments:	5,953,843	3,576,032	4,512,704
Severance and retirement benefits	1,374,492	784,174	883,107
(Reversal of) Loss on valuation of inventory	908,454	(267,928)	542,293
Depreciation	1,649,666	1,447,471	1,243,815
Amortization	644,681	592,218	627,258
Depreciation of right-of-use assets	984,168	293,273	313,540
Loss on disposal of property, plant and equipment	48,156	4	6,794
Bad debt expenses	6,975	233,152	-
Contribution to provisions	104,560	77,424	411,674
Interest expenses	545,827	412,180	369,366
Loss on foreign currency translation	232,078	52,833	120,640
Donations	-	-	13,604
Interest income	(118,021)	(6,845)	(15,287)
Gain on foreign currency translation	(155,650)	(39,603)	(3,618)
Gain on disposal of short-term financial instruments	(271,543)	-	-
Gain on disposal of right-of-use assets	-	(2,321)	(482)
Changes in operating assets and liabilities:	(15,577,094)	(3,407,611)	6,224,541
Trade receivables	(2,296,737)	(5,410,352)	2,860,727
Non-current trade receivables	(114,432)	-	-
Other receivables	(401,201)	59,864	(75,531)
Other current assets	(5,198,230)	(440,406)	(170,444)
Inventories	(9,154,665)	(432,285)	3,192,192
Other non-current assets	(223,317)	-	-
Trade payables	(1,156,988)	1,819,363	3,107,627
Other payables	763,708	1,527,165	(1,247,838)
Other current liabilities	2,550,838	555,258	309,246
Provisions	(321,430)	(262,853)	(270,877)
Other non-current liabilities	(60,430)	36,677	118,137
Defined benefit liabilities transfer from related parties	101,143	184,823	254,868
Plan assets	-	(670,000)	(1,250,000)
Severance payments paid	(65,353)	(374,865)	(603,566)
Cash generated from operations	₩ <u>(22,171,431)</u>	<u>(7,248,985)</u>	<u>(3,715,572)</u>

Doosan Robotics Inc. and Subsidiary
Notes to the Consolidated Financial Statements, Continued
For the years ended December 31, 2022, 2021 and 2020

30. Consolidated statements of cash flows, Continued

(2) Significant non-cash transactions for the years ended December 31, 2022, 2021 and 2020 are as follows:

<i>(In thousands of won)</i>		<u>2022</u>	<u>2021</u>	<u>2020</u>
Transfer from construction-in-progress to other assets	₩	947,778	161,470	1,497,188
Transfer from inventory to of property, plant and equipment		470,325	408,017	-
Transfer to current portion of lease liabilities		829,063	269,873	222,847
Transfer to current portion of provisions		134,744	188,060	-

(3) Changes of liability in financing activities for the years ended December 31, 2022, 2021 and 2020 are summarized as follows:

<i>(In thousands of won)</i>		<u>2022</u>			
		<u>January 1</u>	<u>Acquisition</u>	<u>Cash flows</u>	<u>December 31</u>
Lease liabilities	₩	1,841,997	3,195,321	(790,461)	4,246,857

<i>(In thousands of won)</i>		<u>2021</u>					
		<u>January 1</u>	<u>Acquisition</u>	<u>Cancelation</u>	<u>Cash flows</u>	<u>Others</u>	<u>December 31</u>
Lease liabilities	₩	1,930,955	171,679	(20,549)	(222,437)	(17,651)	1,841,997
Short-term borrowings		3,000,000	-	-	(3,000,000)	-	-
Total	₩	4,930,955	171,679	(20,549)	(3,222,437)	(17,651)	1,841,997

<i>(In thousands of won)</i>		<u>2020</u>					
		<u>January 1</u>	<u>Acquisition</u>	<u>Cancelation</u>	<u>Cash flows</u>	<u>Others</u>	<u>December 31</u>
Lease liabilities	₩	2,101,454	38,625	(5,893)	(203,231)	-	1,930,955
Short-term borrowings		-	-	-	3,000,000	-	3,000,000
Total	₩	2,101,454	38,625	(5,893)	2,796,769	-	4,930,955

31. Events after the reporting period

As of February 16, 2023, according to the resolution of the board of directors, the Company decided to borrow ₩ 10,000,000 thousand from Hana Bank Co., Ltd.. Furthermore, in relation to this borrowing, Doosan Corp., the ultimate parent company, has agreed to provide 319,844 ordinary shares of Doosan Enerbility Co., Ltd. as collateral.