

# **Hyundai Doosan Infracore Co., Ltd. and Subsidiaries**

**Consolidated Financial Statements  
December 31, 2022 and 2021**

**Hyundai Doosan Infracore Co., Ltd. and Subsidiaries**  
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**December 31, 2022 and 2021**

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## Independent Auditor's Report

(English Translation of a Report Originally Issued in Korean)

To the Board of Directors and Shareholders of  
Hyundai Doosan Infracore Co., Ltd.

### Opinion

We have audited the accompanying consolidated financial statements of Hyundai Doosan Infracore Co., Ltd. and its subsidiaries (collectively referred to as the "Group"), which comprise the consolidated statements of financial position as at December 31, 2022 and 2021, and the consolidated statements of profit or loss, and the consolidated statements of comprehensive income, and consolidated statements of changes in equity and consolidated statements of cash flows for the years then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies.

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

### Basis for Opinion

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

### Emphasis of Matter

Without modifying our opinion, we draw attention to Note 45 to the consolidated financial statements of the Group. As discussed in Note 45, the operating results of the investment business segment that are to be transferred to the newly established corporation due to the spin-off during the year ended December 31, 2021 are presented as discontinued operations.

### Key Audit Matters

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

#### (1) Impairment assessment of capitalized development costs

##### Why it is determined to be a key audit matter

As at December 31, 2022, the carrying amount of development costs capitalized as intangible asset is ₩ 100,985 million. The Group operates several R&D centers in Korea, Europe and other regions, and invests significant amounts to develop new products and technologies. Given the extent of judgement of management required, we consider impairment assessment of capitalized development costs to be a key audit matter (Note 16).

### **How our audit addressed the key audit matter**

Key audit procedures we have performed in relation to impairment assessment of capitalized development costs are as follows.

- Obtained an understanding on Group's accounting policies for impairment assessment of development costs, and tested design and operating effectiveness of related internal controls
- Obtained the details of capitalized development costs and reconciled the total amount to the amount recorded in the general ledger
- Tested development costs capitalized by examining management's assessment documentation and assessing whether the criteria set out in the relevant accounting standards have been met on a sampling basis
- Obtained an understanding and evaluated the development progress and prospect of the projects selected as a sample by interviewing with appropriate project manager and performing other procedures, and assessed appropriateness of management's conclusion on impairment analysis
- Examined whether the actual sales have been generated from the projects selected and evaluated reasonableness of sales and profitability forecasts to assess future economic benefits of the projects capitalized

### **(2) Evaluation of provision for warranty**

#### **Why it is determined to be a key audit matter**

As at December 31, 2022, the carrying amount of provision for warranty amounts to ₩ 142,829 million. The Group provides product warranties for certain periods after sales of products and recognizes provision for warranty by estimating expected repair expenses. The performance obligation of warranty is determined based on diverse assumptions such as warranty periods, expected warranty expenses and the nature and extent of the Group provides. We drew attention to the adequacy of the warranty evaluation considering the fact that the management's estimation is intervened in measuring the provision for warranty (Note 24).

#### **How the matter was addressed in the audit**

We performed the following audit procedures in relation to the evaluation of provision for warranty of the Group. We:

- Obtained an understanding of Group's accounting policies for valuation of provision for warranty, and tested design and operating effectiveness of related internal controls
- Verified the accuracy of basic information for accounting estimation used by the management
- Compared reasons for the major assumptions, that management used for estimating the relevant liabilities, with the past performance
- Independently recalculated the balance of liabilities as at December 31, 2022

## **Other Matter**

Auditing standards and their application in practice vary among countries. The procedures and practices used 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 Korean 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.

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

## **Auditor's Responsibilities for the Audit of the Consolidated Financial Statements**

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

As part of an audit in accordance with Korean Standards on Auditing, 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 entity's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the Group audit. We remain solely responsible for our audit opinion.

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

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

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

The engagement partner on the audit resulting in this independent auditor's report is Sung-Woo Choi, Certified Public Accountant.

Seoul, Korea  
March 17, 2023

This report is effective as of March 17, 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 there is a possibility that the above audit report may have to be revised to reflect the impact of such subsequent events or circumstances, if any.

**Hyundai Doosan Infracore Co., Ltd. and Subsidiaries**  
**Consolidated Statements of Financial Position**  
**December 31, 2022 and 2021**

<i>(in Korean won)</i>	Notes	December 31, 2022		December 31, 2021	
<b>Assets</b>					
<b>Current assets</b>					
Cash and cash equivalents	4,539,40	₩	298,374,683,986	₩	545,383,450,272
Short-term financial assets	4,67,40		61,084,072,182		78,646,774,967
Trade and other receivables	8,9,40		1,351,577,584,739		1,493,668,170,072
Inventories	10		1,315,174,320,657		1,077,584,469,079
Derivative assets	25,40		36,823,329,913		1,886,450,241
Other current assets	11		67,818,895,766		42,674,814,088
			<u>3,130,852,887,243</u>		<u>3,239,844,128,719</u>
<b>Non-current assets</b>					
Investments in associates and joint ventures	12,44		295,831,153		393,863,593
Long-term financial assets	4,67,40		12,308,547,479		20,367,285,116
Long-term trade and other receivables	8,40		33,148,181,285		46,076,439,193
Investment properties	13		9,818,624,134		11,148,499,179
Property, plant and equipment	14,18		1,156,403,731,850		1,162,534,800,169
Intangible assets	16,17		167,749,023,683		165,399,677,304
Right-of-use assets	0		72,225,450,176		36,852,362,288
Deferred tax assets	36		99,727,355,861		94,433,403,506
Long-term derivative assets	25,40		1,321,032,962		-
Defined benefit assets	23		49,302,720,424		-
Other non-current assets			3,514,200,000		5,239,338,668
			<u>1,605,814,699,007</u>		<u>1,542,445,669,016</u>
<b>Total assets</b>		₩	<u>4,736,667,586,250</u>	₩	<u>4,782,289,797,735</u>
<b>Liabilities</b>					
<b>Current liabilities</b>					
Short-term financial liabilities	4,18,19,22,40,41,42	₩	756,694,245,300	₩	1,248,400,708,058
Current lease liabilities	15,40		14,639,270,019		13,601,820,753
Trade and other payables	20,40		1,042,231,418,855		1,013,299,879,352
Contract liabilities	30		141,177,100,440		149,323,541,606
Current derivative liabilities	24,40		500,346,677		2,354,540,803
Current tax liabilities	36		5,312,986,484		211,150,780,775
Current provisions	24		83,487,913,716		116,309,452,677
Other current liabilities	21,24		29,827,616,332		14,328,818,686
			<u>2,073,870,897,823</u>		<u>2,768,769,542,710</u>
<b>Non-current liabilities</b>					
Long-term financial liabilities	4,18,19,22,40,41,42		817,960,084,747		515,098,060,619
Non-current lease liabilities	15,40		45,628,376,995		11,190,372,322
Long-term trade and other payables	20,40		7,981,499,886		15,344,617,114
Non-current contract liabilities	30		16,700,765,449		16,785,243,641
Defined benefit liabilities	24,40		192,063,018		13,282,472,967
Non-current provisions	23		60,435,686,763		37,734,432,460
Deferred tax liabilities	21,24		78,857,253,703		34,261,161,774
			<u>1,027,755,730,561</u>		<u>643,696,360,897</u>
<b>Total liabilities</b>			<u>3,101,626,628,384</u>		<u>3,412,465,903,607</u>
<b>Equity</b>					
Share capital	1,26		197,763,411,000		197,434,567,000
Capital surplus	26		330,734,345,311		629,006,834,313
Other components of equity	27		(1,580,526,916,708)		(1,580,314,102,146)
Accumulated other comprehensive income	28		256,351,254,019		245,424,395,334
Retained earnings	29		2,431,314,541,985		1,879,093,975,716
<b>Equity attributable to owners of the Parent Company</b>			<u>1,635,636,635,607</u>		<u>1,370,645,670,217</u>
<b>Non-controlling interest</b>			<u>(595,677,741)</u>		<u>(821,776,089)</u>
<b>Total equity</b>			<u>1,635,040,957,866</u>		<u>1,369,823,894,128</u>
<b>Total liabilities and equity</b>		₩	<u>4,736,667,586,250</u>	₩	<u>4,782,289,797,735</u>

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

**Hyundai Doosan Infracore Co., Ltd. and Subsidiaries**  
**Consolidated Statements of Profit or Loss**  
**Years Ended December 31, 2022 and 2021**

<i>(in Korean won)</i>	<b>Notes</b>	<b>2022</b>		<b>2021</b>	
<b>Revenue</b>	30,32	₩	4,756,113,501,671	₩	4,593,665,146,349
<b>Cost of goods sold</b>	33		<u>(3,748,492,193,515)</u>		<u>(3,602,346,827,882)</u>
<b>Gross profit</b>			1,007,621,308,156		991,318,318,467
Selling and administrative expenses	31,33		<u>(675,074,423,891)</u>		<u>(726,810,512,890)</u>
<b>Operating profit</b>			332,546,884,265		264,507,805,577
Finance income	34		141,192,070,611		118,981,946,352
Finance costs	4,34		(187,037,541,686)		(160,535,739,367)
Other non-operating income	35		15,917,085,722		10,739,743,808
Other non-operating expenses	35		(23,816,154,733)		(37,835,258,651)
Loss on equity method	12		<u>(92,743,225)</u>		<u>(21,844,588,648)</u>
<b>Profit before income tax</b>			278,709,600,954		174,013,909,071
Income tax expense	36		<u>(49,158,104,964)</u>		<u>(62,429,670,386)</u>
<b>Profit from continuing operations</b>		₩	229,551,495,990	₩	111,584,238,685
<b>Profit from discontinued operations</b>	45	₩	-	₩	456,251,591,575
<b>Profit for the year :</b>	32	₩	229,551,495,990	₩	567,835,830,260
Owners of the Parent Company		₩	229,771,426,564	₩	461,535,332,054
Non-controlling interest			(219,930,574)		106,300,498,206
<b>Earnings per share</b>					
<b>attributable to the equity holders of the Parent Company</b>	37				
<b>Continuing operations and Discontinued operations</b>					
Basic earnings per share		₩	1,163	₩	5,816
Diluted earnings per share			1,157		5,336
<b>Continuing operations</b>					
Basic earnings per share		₩	1,163	₩	1,335
Diluted earnings per share			1,157		1,228

The above consolidated statements of profit or loss should be read in conjunction with the accompanying notes.

**Hyundai Doosan Infracore Co., Ltd. and Subsidiaries**  
**Consolidated Statements of Comprehensive Income**  
**Years Ended December 31, 2022 and 2021**

<i>(in Korean won)</i>	<b>Notes</b>	<b>2022</b>	<b>2021</b>
<b>Profit for the year</b>		₩ 229,551,495,990	₩ 567,835,830,260
<b>Other comprehensive income</b>			
<i>Items that will not be reclassified to profit or loss :</i>			
Remeasurements of net defined benefit liability	23	22,449,139,705	12,567,971,522
Revaluation reserves of property, plant and equipment	14	2,030,078,835	3,199,520,031
Gain on valuation of equity instruments at fair value through other comprehensive income		-	1,544,268,015
<i>Items that may be subsequently reclassified to profit or loss :</i>	28		
Exchange differences		(19,148,115,102)	200,422,321,301
Cash flow hedges		28,490,923,874	(220,337,813)
<b>Other comprehensive income for the year, net of tax</b>	25	33,822,027,312	217,513,743,056
<b>Total comprehensive income for the year</b>		₩ 263,373,523,302	₩ 785,349,573,316
<b>Total comprehensive income for the year is attributable to:</b>			
Owners of the Parent Company		₩ 263,147,424,954	₩ 616,637,221,671
Non-controlling interest		226,098,348	168,712,351,645
		₩ 263,373,523,302	₩ 785,349,573,316

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

**Hyundai Doosan Infracore Co., Ltd. and Subsidiaries**  
**Consolidated Statements of Changes in Equity**  
**Years Ended December 31, 2022 and 2021**

(in Korean won)

Notes	Attributable to owners of the Parent Company								Non-controlling Interest	Total
	Share capital	Capital surplus	Other components of equity	Accumulated other comprehensive income	Retained Earnings	Subtotal				
<b>Balance at January 1, 2021</b>	W 1,079,658,125,000	W 166,597,929,630	W (71,162,757,356)	W (205,475,268,112)	W 1,408,125,824,003	W 2,377,743,853,165	W 2,111,254,751,427	W 4,488,998,604,592		
<b>Total comprehensive income:</b>										
Profit for the year	-	-	-	-	461,535,332,054	461,535,332,054	106,300,498,206	567,835,830,260		
Remeasurement of net defined benefit liabilities	23	-	-	-	7,888,551,644	7,888,551,644	4,679,419,878	12,567,971,522		
Revaluation reserves of property, plant and equipment	14	-	-	-	3,199,520,031	3,199,520,031	-	3,199,520,031		
Loss(Gain) on valuation of financial assets at fair value through other comprehensive income	28	-	-	-	-	-	-	-		
Exchange differences	28	-	-	-	142,692,502,747	142,692,502,747	57,729,818,554	200,422,321,301		
Cash flow hedges	25	-	-	-	(222,952,820)	(222,952,820)	2,615,007	(220,337,813)		
<b>Total comprehensive income for the period</b>					<b>145,669,069,958</b>	<b>470,968,151,713</b>	<b>168,712,351,645</b>	<b>785,349,573,316</b>		
<b>Transactions with owners:</b>										
Cancellation and redemption of share options		-	289,872,269	(289,872,269)	-	-	-	-		
Exercise of stock warrants		190,248,616,000	67,801,213,194	-	-	-	-	258,049,829,194		
Acquisition and disposition of treasury shares		-	3,784,187	(1,093,992,368)	-	-	-	(1,090,208,181)		
Changes in Shares of Subsidiaries		-	-	(166,663,913,629)	-	-	(138,500,758,821)	(305,164,672,450)		
Capital increase		115,107,913,000	568,598,691,210	-	-	-	-	683,706,604,210		
Capital reduction without consideration		(318,097,492,000)	-	318,097,492,000	-	-	-	-		
Spin-off		(869,482,595,000)	(174,284,656,177)	(1,659,201,058,524)	305,230,593,488	-	(2,142,288,120,340)	(4,540,025,836,553)		
<b>Total transactions with owners</b>		<b>(882,223,558,000)</b>	<b>462,408,904,683</b>	<b>(1,509,151,344,790)</b>	<b>305,230,593,488</b>	<b>-</b>	<b>(1,623,735,404,619)</b>	<b>(2,280,788,879,161)</b>	<b>(3,904,524,283,780)</b>	
<b>Balance at December 31, 2021</b>	W 197,434,567,000	W 629,006,834,313	W (1,580,314,102,146)	W 245,424,395,334	W 1,879,093,975,716	W 1,370,645,670,217	W (821,776,089)	W 1,369,823,894,128		
<b>Balance at January 1, 2022</b>	W 197,434,567,000	W 629,006,834,313	W (1,580,314,102,146)	W 245,424,395,334	W 1,879,093,975,716	W 1,370,645,670,217	W (821,776,089)	W 1,369,823,894,128		
<b>Total comprehensive income:</b>										
Profit for the year		-	-	-	229,771,426,564	229,771,426,564	(219,930,574)	229,551,495,990		
Remeasurement of net defined benefit liabilities	23	-	-	-	22,449,139,705	22,449,139,705	-	22,449,139,705		
Revaluation reserves of property, plant and equipment	14	-	-	-	2,030,078,835	2,030,078,835	-	2,030,078,835		
Exchange differences	28	-	-	-	(19,594,144,024)	(19,594,144,024)	446,028,922	(19,148,115,102)		
Cash flow hedges	25	-	-	-	28,490,923,874	28,490,923,874	-	28,490,923,874		
<b>Total comprehensive income for the period</b>					<b>10,926,858,685</b>	<b>252,220,566,269</b>	<b>226,098,348</b>	<b>263,373,523,302</b>		
<b>Transactions with owners:</b>										
Cancellation and redemption of share options	27	-	212,814,562	(212,814,562)	-	-	-	-		
Exercise of stock warrants	26	328,844,000	1,514,696,436	-	-	-	-	1,843,540,436		
Conversion of capital surplus to retained earnings	26	-	(300,000,000,000)	-	-	300,000,000,000	-	-		
<b>Total transactions with owners</b>		<b>328,844,000</b>	<b>(298,272,489,002)</b>	<b>(212,814,562)</b>	<b>-</b>	<b>300,000,000,000</b>	<b>-</b>	<b>1,843,540,436</b>		
<b>Balance at December 31, 2022</b>	W 197,763,411,000	W 330,734,345,311	W (1,580,526,916,708)	W 256,351,254,019	W 2,431,314,541,985	W 1,635,636,635,607	W (595,677,741)	W 1,635,040,957,866		

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

**Hyundai Doosan Infracore Co., Ltd. and Subsidiaries**  
**Consolidated Statements of Cash Flows**  
**Years Ended December 31, 2022 and 2021**

<i>(in Korean won)</i>	Note	2022	2021
<b>Cash flows from operating activities</b>			
Cash generated from operations:	39		
Profit for the year		₩ 229,551,495,990	₩ 567,835,830,260
Adjustments		365,753,775,881	423,299,575,295
Changes in operating assets and liabilities		(300,656,717,422)	(577,598,297,894)
Interest received		29,144,653,059	12,451,669,045
Interest paid		(71,700,616,757)	(118,605,194,527)
Dividends received		418,750,000	448,000,000
Income tax paid		(234,778,252,728)	(106,022,958,098)
<b>Net cash inflow from operating activities</b>		<u>17,733,088,023</u>	<u>201,808,624,081</u>
<b>Cash flows from investing activities</b>			
Decrease in short-term financial assets		24,818,633,155	52,097,436,914
Decrease in long-term financial assets		1,338,985,633	3,612,403,602
Decrease in loans		-	15,643,237
Disposal of property, plant and equipment	14	3,954,559,120	5,291,125,862
Disposal of intangible assets	16	3,590,643,190	2,452,985,930
Disposal of investment properties	13	109,607,507	406,880,321
Others		207,872,000	7,747,375,000
Increase in short-term financial assets		-	(225,073,803)
Increase in long-term financial assets		(38,205,000)	(10,075,111,084)
Increase in loans		-	(1,292,898)
Acquisition of property, plant and equipment	14	(89,538,287,773)	(119,325,994,512)
Acquisition of intangible assets	16	(31,250,362,346)	(36,912,836,532)
Acquisition of investment properties	13	-	(463,969,580)
Acquisition of investment in associates and joint ventures		-	(3,604,000,000)
Changes in the consolidation scope (obtaining a control)		(4,085,460,797)	-
Others		-	(77,268,031,278)
<b>Net cash outflow from investing activities</b>		<u>(90,892,015,311)</u>	<u>(176,252,458,821)</u>
<b>Cash flows from financing activities</b>			
Capital increase		-	688,345,319,740
Increase in long-term financial liabilities		837,949,121,953	1,057,996,061,961
Exercise of stock warrants		1,666,409,430	257,496,711,725
Disposal of treasury shares		-	1,832,377
Net decrease in short-term financial liabilities		(101,768,868,368)	(362,225,676,584)
Decrease in long-term financial liabilities		(934,430,064,055)	(740,383,480,745)
Cost of issuance of new shares		(22,385,200)	(4,638,715,530)
Changes in shares of subsidiaries		-	(295,043,826,999)
Repayments for lease liabilities	15	(17,593,792,164)	(31,341,173,757)
Acquisition of treasury shares		-	(1,101,427,547)
<b>Net cash inflow (outflow) from financing activities</b>		<u>(214,199,578,404)</u>	<u>569,105,624,641</u>
Effects of exchange rate changes on cash and cash equivalents		40,349,739,406	71,151,023,091
Decrease cash due to spin-off		-	(1,783,888,402,547)
<b>Net decrease in cash and cash equivalents</b>		(247,008,766,286)	(1,118,075,589,555)
Cash and cash equivalents at the beginning of the year		<u>545,383,450,272</u>	<u>1,663,459,039,827</u>
<b>Cash and cash equivalents at the end of the year</b>		<u>₩ 298,374,683,986</u>	<u>₩ 545,383,450,272</u>

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

# Hyundai Doosan Infracore Co., Ltd. and Subsidiaries

## Notes to the Consolidated Financial Statements

### December 31, 2022 and 2021

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#### 1. General Information

##### (1) The Parent Company

Hyundai Doosan Infracore Co.,Ltd. (the Parent Company) was incorporated on October 23, 2000, through a spin-off from machinery business segment of Daewoo Heavy Industries Ltd. (“DHI”). The Parent Company operates and manages manufacturing and selling businesses of industrial machinery and equipment.

On February 2, 2001, the Parent Company listed its stock on the Korea Exchange, and changed its name to Doosan Infracore Co., Ltd. from Daewoo Heavy Industries & Machinery Ltd. on April 29, 2005 and changed its name to Hyundai Doosan Infracore Co.,Ltd. from Doosan Infracore Co., Ltd. on September 10, 2022.

On July 1, 2021, the investment business segment including business of Doosan Bobcat Co., Ltd. and others, was spun off.

The Parent Company’s share capital as at December 31, 2022, amount to ₩ 197,763 million through capital reduction without consideration (reduction in par value) and capital increases after the spin-off. As at December 31, 2022, 33.29% of the Parent Company is owned by Hyundai Genuine Co., Ltd.

# Hyundai Doosan Infracore Co., Ltd. and Subsidiaries

## Notes to the Consolidated Financial Statements

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#### (2) Consolidated Subsidiaries

1) The Parent Company's consolidated subsidiaries as at December 31, 2022 and 2021, are as follows:

Subsidiary	Main business	Location	Ownership interest held				Fiscal year end
			by the Group <sup>1</sup> (%)		by non-controlling interests <sup>1</sup> (%)		
			2022	2021	2022	2021	
Doosan Infracore China Co., Ltd. <sup>2</sup>	Manufacturing and Sales	China	100.00	100.00	-	-	December 31
Doosan Infracore (China) Investment Co., Ltd.	Holdings	China	100.00	100.00	-	-	December 31
Doosan Infracore North America LLC.	Manufacturing and Sales	USA	100.00	100.00	-	-	December 31
Doosan (China) Financial Leasing Corp.	Finance	China	100.00	100.00	-	-	December 31
Hyundai Doosan Infracore Chile S.A. <sup>3</sup>	Sales	Chile	100.00	100.00	-	-	December 31
Doosan Infracore (Shandong) Co., Ltd.	Sales	China	100.00	100.00	-	-	December 31
Doosan Infracore Norway AS.	Manufacturing and Sales	Norway	100.00	100.00	-	-	December 31
Doosan Infracore South America Industria E Comercio De Maquinas De Construcao LTDA	Sales	Brazil	99.99	99.99	0.01	0.01	December 31
Doosan Infracore Construction Equipment India Private Ltd.	Sales	India	100.00	100.00	-	-	March 31
Clue Insight Inc	Software Development and Sales	USA	72.21	72.21	27.79	27.79	December 31
Doosan Infracore Europe s.r.o.	Manufacturing and Sales	Czech	100.00	100.00	-	-	December 31
Doosan Infracore Hunan Corp.	Sales	China	100.00	100.00	-	-	December 31
Doosan Infracore Beijing Corp.	Sales	China	100.00	100.00	-	-	December 31
ECUBE Solution Co., Ltd.	Manufacturing and Sales	Korea	60.00	60.00	40.00	40.00	December 31
Tianjin Hyundai Doosan Engine Co.,Ltd. <sup>4</sup>	Manufacturing and Sales	China	100.00	50.00	-	50.00	December 31
Doosan Infracore Deutschland GmbH <sup>5</sup>	Sales	Germany	100.00	0.00	-	-	December 31

<sup>1</sup> The 'ownership interests held by the Group' refers to the simply aggregated portion of ownership interests directly held by the Parent Company and its consolidated subsidiaries. The 'ownership interests held by non-controlling interests' refers to the portion of ownership interests that are not attributable to the owners of the Parent Company, directly or indirectly. The 'ownership interests held by non-controlling interests' may differ from the portion of interests calculated by subtracting aggregated total portion of interests directly held by the entities within the Group from 100% (In other words, it is calculated by subtracting the effective ownership interest held by the entities within the Group from 100%).

<sup>2</sup> For the year ended December 31, 2021, the Group acquired all of the residual shares of Doosan Infracore China Co., Ltd.

# Hyundai Doosan Infracore Co., Ltd. and Subsidiaries

## Notes to the Consolidated Financial Statements

### December 31, 2022 and 2021

<sup>3</sup> For the year ended December 31, 2022, Doosan Bobcat Chile S.A changed its name to Hyundai Doosan Infracore Chile S.A.

<sup>4</sup> For the year ended December 31, 2022, the Group acquired 50% of the residual shares of Tianjin Lovol Doosan Engine Company Ltd., a joint venture, for ₩ 5,017 million, and changed its name to Tianjin Hyundai Doosan Engine Company Ltd.

<sup>5</sup> For the year ended December 31, 2022, the Group newly established Doosan Infracore Deutschland GmbH as a wholly owned subsidiary of the Group.

2) Summarized financial information for major consolidated subsidiaries as at and for the year ended December 31, 2022 is as follows:

(in millions of Korean won)

	Assets	Liabilities	Sales	Profit for the year	Total comprehensive income
Doosan Infracore China Co., Ltd.	₩ 1,288,688	₩ 545,049	₩ 975,660	₩ 25,481	₩ 5,020
Doosan Infracore (China) Investment Co., Ltd.	128,874	2,183	30,205	2,814	(3,142)
Doosan Infracore North America LLC	317,230	241,925	512,977	13,161	16,937
Doosan (China) Financial Leasing Corp.	618,213	381,049	60,384	18,914	10,788
Doosan Infracore Europe s.r.o.	342,610	312,642	794,850	7,308	7,420

### (3) Changes in the Scope of Consolidation

1) Changes in the scope of consolidation for the year ended December 31, 2022, are as follows:

Subsidiary	Description	Reason
Doosan Infracore Japan Corp.	Excluded from consolidation	Liquidation
Tianjin Hyundai Doosan Engine Co.,Ltd.	Newly included in consolidation	Acquisition of the shares
Doosan Infracore Deutschland GmbH	Newly included in consolidation	New establishment corporation

2) Changes in the scope of consolidation for the year ended December 31, 2021, are as follows:

Subsidiary	Description	Reason
Doosan Infracore USA LLC	Newly included in consolidation	New establishment corporation
Doosan International Australia Pty Ltd.	Excluded from consolidation	Liquidation
Doosan Infracore USA LLC	Excluded from consolidation	Spin-off
D20 Capital, LLC	Excluded from consolidation	Spin-off
D20 CAPITAL FUND I, L.P.	Excluded from consolidation	Spin-off
Doosan Bobcat Co., Ltd.	Excluded from consolidation	Spin-off
Doosan Bobcat Global Collaboration Center, Inc.	Excluded from consolidation	Spin-off

**Hyundai Doosan Infracore Co., Ltd. and Subsidiaries**  
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<b>Subsidiary</b>	<b>Description</b>	<b>Reason</b>
Doosan Bobcat Singapore Pte. Ltd.	Excluded from consolidation	Spin-off
Doosan Bobcat Korea Co., Ltd.	Excluded from consolidation	Spin-off
Doosan Bobcat Chile Compact SpA.	Excluded from consolidation	Spin-off
Doosan Bobcat India Private Ltd.	Excluded from consolidation	Spin-off
Bobcat Corp.	Excluded from consolidation	Spin-off
Doosan Bobcat Mexico S.A. de C.V.	Excluded from consolidation	Spin-off
Doosan Bobcat China Co., Ltd.	Excluded from consolidation	Spin-off
Clark Equipment Co.	Excluded from consolidation	Spin-off
Bobcat Equipment Ltd.	Excluded from consolidation	Spin-off
Bobcat Bensheim GmbH.	Excluded from consolidation	Spin-off
Doosan Holding France S.A.S.	Excluded from consolidation	Spin-off
CJSC Doosan International Russia	Excluded from consolidation	Spin-off
Doosan International UK Ltd.	Excluded from consolidation	Spin-off
Doosan International South Africa Pty Ltd.	Excluded from consolidation	Spin-off
Doosan Bobcat EMEA s.r.o.	Excluded from consolidation	Spin-off
Bobcat France S.A.	Excluded from consolidation	Spin-off
Geith International Ltd.	Excluded from consolidation	Spin-off

# Hyundai Doosan Infracore Co., Ltd. and Subsidiaries

## Notes to the Consolidated Financial Statements

### December 31, 2022 and 2021

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## 2. Significant Accounting Policies

### 2.1 Basis of Preparation

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

Certain information attached to the Korean language financial statements, but not required for a fair presentation of the Group's financial position, financial performance or cash flows, is not presented in the accompanying consolidated financial statements.

The consolidated financial statements of the Group have been prepared in accordance with Korean IFRS. These are the standards, subsequent amendments and related interpretations issued by the International Accounting Standards Board (IASB) that have been adopted by the Republic of Korea.

The consolidated financial statements have been prepared on a historical cost basis, except for the following:

- Certain financial assets and liabilities (including derivative instruments), certain property, plant and equipment and investment property – measured at fair value
- defined benefit pension plans – plan assets measured at fair value

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

#### *(1) New and amended standards and interpretations adopted by the Group*

The Group has applied the following standards and amendments for the first time for their annual reporting period commencing January 1, 2022.

#### *- Amendment to Korean IFRS 1116 Leases - Covid-19 - Related Rent Concessions beyond June 30, 2021*

The application of the practical expedient, a lessee may elect not to assess whether a rent concession occurring as a direct consequence of the COVID-19 pandemic is a lease modification, is extended to lease payments originally due on or before June 30, 2022. A lessee shall apply the practical expedient consistently to eligible contracts with similar characteristics and in similar circumstances. The amendment does not have a significant impact on the consolidated financial statements.

# Hyundai Doosan Infracore Co., Ltd. and Subsidiaries

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#### *- Amendments to Korean IFRS 1103 Business Combination – Reference to the Conceptual Framework*

The amendments update a reference of definition of assets and liabilities to be recognized in a business combination in revised Conceptual Framework for Financial Reporting. However, the amendments add an exception for the recognition of liabilities and contingent liabilities within the scope of Korea IFRS 1037 *Provisions, Contingent Liabilities and Contingent Assets*, and Korean IFRS 2121 *Levies*. The amendments also clarify that contingent assets should not be recognized at the acquisition date. The amendment does not have a significant impact on the consolidated financial statements.

#### *- Amendments to Korean IFRS 1016 Property, Plant and Equipment - Proceeds before intended use*

The amendments prohibit an entity from deducting from the cost of an item of property, plant and equipment any proceeds from selling items produced while the entity is preparing the asset for its intended use. Instead, the entity will recognize the proceeds from selling such items, and the costs of producing those items, in profit or loss. The amendment does not have a significant impact on the consolidated financial statements.

#### *- Amendments to Korean IFRS 1037 Provisions, Contingent Liabilities and Contingent Assets - Onerous Contracts : Cost of Fulfilling a Contract*

The amendments clarify that the direct costs of fulfilling a contract include both the incremental costs of fulfilling the contract and an allocation of other costs directly related to fulfilling contracts when assessing whether the contract is onerous. The amendment does not have a significant impact on the consolidated financial statements.

#### *- Annual improvements to Korean IFRS 2018-2020*

Annual improvements of Korean IFRS 2018-2020 Cycle should be applied for annual periods beginning on or after January 1, 2022, and earlier application is permitted. The amendment does not have a significant impact on the consolidated financial statements.

- Korean IFRS 1101 *First time Adoption of Korean International Financial Reporting Standards* – Subsidiaries that are first-time adopters
- Korean IFRS 1109 *Financial Instruments* – Fees related to the 10% test for derecognition of financial liabilities
- Korean IFRS 1041 *Agriculture* – Measuring fair value

# Hyundai Doosan Infracore Co., Ltd. and Subsidiaries

## Notes to the Consolidated Financial Statements

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#### *(2) New standards and interpretations not yet adopted by the Group*

The following new accounting standards and interpretations have been published that are not mandatory for December 31, 2022 reporting periods and have not been early adopted by the Group.

#### *- Amendments to Korean IFRS 1001 Presentation of Financial Statements - Classification of Liabilities as Current or Non-current*

The amendments clarify that liabilities are classified as either current or non-current, depending on the substantive rights that exist at the end of the reporting period. Classification is unaffected by the likelihood that an entity will exercise right to defer settlement of the liability or the expectations of management. Also, the settlement of liability includes the transfer of the entity's own equity instruments, however, it would be excluded if an option to settle them by the entity's own equity instruments if compound financial instruments is met the definition of equity instruments and recognized separately from the liability. The amendments should be applied for annual periods beginning on or after January 1, 2024, and earlier application is permitted. The Group does not expect that these amendments have a significant impact on the consolidated financial statements.

#### *- Korean IFRS 1001 Presentation of Financial Statements - Disclosure of Accounting Policies*

The amendments to Korean IFRS 1001 define and require entities to disclose their material accounting policies. The amendments should be applied for annual periods beginning on or after January 1, 2023, and earlier application is permitted. The Group does not expect that these amendments have a significant impact on the consolidated financial statements.

#### *- Korean IFRS 1008 Accounting policies, changes in accounting estimates and errors - Definition of Accounting Estimates*

The amendments define accounting estimates and clarify how to distinguish them from changes in accounting policies. The amendments should be applied for annual periods beginning on or after January 1, 2023, and earlier application is permitted. The Group does not expect that these amendments have a significant impact on the consolidated financial statements.

#### *- Korean IFRS 1012 Income Taxes - Deferred Tax related to Assets and Liabilities arising from a Single Transaction*

The amendments include an additional condition to the exemption to initial recognition of an asset or liability that a transaction does not give rise to equal taxable and deductible temporary differences at the time of the transaction. The amendments should be applied for annual periods beginning on or after January 1, 2023, and earlier application is permitted. The Group does not expect that these amendments have a significant impact on the consolidated financial statements.

#### *- New Standard: Korean IFRS 1117 Insurance Contract*

Korean IFRS 1117 *Insurance Contracts* replaces Korean IFRS 1104 *Insurance Contracts*. This Standard estimates future cash flows of an insurance contract and measures insurance liabilities using discount rates applied with assumptions and risks at the measurement date. The entity

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recognizes insurance revenue on an accrual basis including services (insurance coverage) provided to the policyholder by each annual period. In addition, investment components (Refunds due to termination/maturity) repaid to a policyholder even if an insured event does not occur, are excluded from insurance revenue, and insurance financial income or expense and the investment income or expense are presented separately to enable users of the information to understand the sources of income or expenses. This Standard should be applied for annual periods beginning on or after January 1, 2023, and earlier application is permitted for entities that applied Korean IFRS 1109 Financial Instruments. The Group does not expect that these amendments have a significant impact on the consolidated financial statements.

Further amendments made in December 2021 added a transition option that permits an entity to apply an optional classification overlay in the comparative period(s) presented on initial application of Korean IFRS 1117. The classification overlay applies to all financial assets, including those held in respect of activities not connected to contracts within the scope of Korean IFRS 1117. It allows those assets to be classified in the comparative period(s) in a way that aligns with how the entity expects those assets to be classified on initial application of Korean IFRS 1109. The classification can be applied on an instrument-by-instrument basis.

#### *- Korean IFRS 1001 Presentation of Financial Statements - Disclosure of gain or loss on valuation of financial liabilities subject to adjustment of exercise price*

If the entire or a part of financial instrument, whose exercise price is subject to change due to the issuer's share price, is classified as a financial liability, the carrying amount of the financial liability and related gains and losses shall be disclosed. The amendments should be applied for annual periods beginning on or after January 1, 2023, and earlier application is permitted. The Group does not expect that these amendments have a significant impact on the consolidated financial statements.

#### *(3) Reclassification of financial statements for the comparative year*

In order to facilitate comparison with the current period, some accounts are reclassified according to the category of accounts in the current financial statements. This reclassification does not affect the net profit or loss or net asset value reported in the previous year.

## **2.2 Consolidation**

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

### *1) Subsidiaries*

Subsidiaries are all entities over which the Group has control. The Group controls an entity when the Group is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power to direct the activities of the entity. Subsidiaries are fully consolidated from the date on which control is transferred to the Group. They are deconsolidated from the date that control ceases.

Subsidiaries are fully consolidated from the date on which control is transferred to the Group. They

# Hyundai Doosan Infracore Co., Ltd. and Subsidiaries

## Notes to the Consolidated Financial Statements

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are deconsolidated from the date that control ceases.

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

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

Intercompany transactions, balances and unrealized gains on transactions between group companies are eliminated. Accounting policies of subsidiaries have been changed where necessary to ensure consistency with the policies adopted by the Group.

The Group treats transactions with non-controlling interests that do not result in a loss of control as transactions with equity owners of the Group. A change in ownership interest results in an adjustment between the carrying amounts of the controlling and non-controlling interest to reflect their relative interest in the subsidiary. Any difference between the amount of the adjustment to non-controlling interest and any consideration paid or received is recognized in a separate reserve within equity attributable to owners of the Parent Company. When the Group ceases to consolidate for a subsidiary because of a loss of control, any retained interest in the subsidiary is remeasured to its fair value with the change in carrying amount recognized in profit or loss.

#### *2) Investments in Associates and Joint Ventures*

Associates are entities over which the Group has significant influence but not control or joint control, where the Group in general holds 20% or more and 50% or less of the voting rights. Investments in joint ventures are investees sharing control over its economic activities with the Group based on a contractual agreement. The contractually agreed sharing of control of an arrangement only exist when financial and operating policy decisions of the investee require the unanimous consent of the parties sharing control.

Investments in associates and joint ventures (collectively referred to as the "associates, etc.") are accounted for using the equity method of accounting, after initially being recognized at cost. The carrying amount of the investments contains the goodwill identified on initial recognition and is presented at the amount less accumulated impairment losses.

The Group's proportionate interest of the investee's profit or loss and changes in other comprehensive income after the date of acquisition is respectively recognized in the Group's profit or

# Hyundai Doosan Infracore Co., Ltd. and Subsidiaries

## Notes to the Consolidated Financial Statements

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loss and other comprehensive income. Cumulative changes after acquisition are adjusted from the carrying amount of the investment. If the Group's share of losses of the associates, etc. is greater than or equal to the investment in the associate, etc., including other unsecured notes, the Group discontinues to recognize further losses, except where it is obligated or required to be paid on behalf of the associates, etc. If there is an objective evidence of impairment for the investment in the associate, the Group recognizes the difference between the recoverable amount of the associate and its book amount as impairment loss. If an associate uses accounting policies other than those of the Group for like transactions and events in similar circumstances, if necessary, adjustments shall be made to make the associate's accounting policies conform to those of the Group when the associate's financial statements are used by the Group in applying the equity method.

Unrealized gains on transactions between the Group and its associates, etc are eliminated to the extent of the Group's interest in the associates. If there is an objective evidence of impairment for the investment in the associate, the Group recognizes the difference between the recoverable amount of the associate and its book amount as impairment loss.

Accounting policies of associate, etc. are changed if necessary for consistency with those of the Group.

For overseas investees whose financial statements are prepared in foreign currencies, the equity method is applied to financial statements translated in accordance with the accounting treatments of the translation of the financial statements of overseas' subsidiaries. The amount of difference between the translated amount of assets less liabilities and translated amount of equity is recognized as changes in the investee's equity (accumulated other comprehensive income) to the extent equivalent to the Group's interest.

### **2.3 Foreign Currency Translation**

#### *1) Functional and presentation currency*

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

#### *2) Transactions and balances*

Foreign currency transactions are translated into the functional currency using the exchange rates at the dates of the transactions. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation of monetary assets and liabilities denominated in foreign currencies at year end exchange rates are generally recognized in profit or loss. They are deferred in other comprehensive income if they relate to qualifying cash flow hedges and qualifying effective portion of net investment hedges, or are attributable to monetary part of the net investment in a foreign operation.

# Hyundai Doosan Infracore Co., Ltd. and Subsidiaries

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Non-monetary items that are measured at fair value in a foreign currency are translated using the exchange rates at the date when the fair value was determined. Translation differences on assets and liabilities carried at fair value are reported as part of the fair value gain or loss. For example, translation differences on non-monetary assets and liabilities such as equities held at fair value through profit or loss are recognized in profit or loss as part of the fair value gain or loss and translation differences on non-monetary assets such as equities held at fair value through other comprehensive income are recognized in other comprehensive income.

#### 3) *Translation to the presentation currency*

The results and financial position of foreign operations that have a functional currency different from the presentation currency are translated into the presentation currency as follows:

- ① Assets and liabilities for each statement of financial position presented are translated at the closing rate at the end of the reporting period.
- ② Income and expenses for each statement of profit or loss are translated at average exchange rates, unless this average is not reasonable approximation of the cumulative effect of the rates prevailing on the transaction dates, in which case income and expenses are translated at the rates on the dates of the transactions.
- ③ All resulting exchange differences are recognized in other comprehensive income.

Exchange differences from the net investment in the foreign operation and from other foreign currency instruments designated as hedging instrument for such investment are recognized in other comprehensive income. On disposal of part or all foreign operation, which leads to the loss of control, all of the accumulated exchange differences in respect of that operation are reclassified to profit or loss. Goodwill and fair value adjustments arising from the acquisition of a foreign operation are recognized as assets and liabilities of the foreign operation and translated at the closing exchange rate.

## 2.4 Cash and Cash Equivalents

Cash and cash equivalents include cash on hand, cash in bank, and other short-term highly liquid investments that are readily convertible to a known amount of cash. Bank overdraft is classified as short-term financial liabilities in the consolidated statements of financial position.

## 2.5 Financial Assets

### 1) *Classification*

The Group classifies its financial assets in the following measurement categories:

- those to be measured at fair value through profit or loss

# Hyundai Doosan Infracore Co., Ltd. and Subsidiaries

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- those to be measured at fair value through other comprehensive income, and

- those to be measured at amortized cost.

The classification depends on the Group's business model for managing the financial assets and the contractual terms of the cash flows. For financial assets measured at fair value, gains and losses will either be recorded in profit or loss or other comprehensive income. For investments in debt instruments, this will depend on the business model in which the investment is held. The Group reclassifies debt investments when, and only when its business model for managing those assets changes.

For investments in equity instruments that are not held for trading, this will depend on whether the Group has made an irrevocable election at the time of initial recognition to account for the equity investment at fair value through other comprehensive income. The changes of fair value of equity investments that are not designated under the fair value option are recorded through profit or loss.

#### *2) Recognition and Measurement*

At initial recognition, the Group measures a financial asset at its fair value plus, in the case of a financial asset not at fair value through profit or loss, transaction costs that are directly attributable to the acquisition of the financial asset. Transaction costs of financial assets carried at fair value through profit or loss are expensed in profit or loss. Financial assets with embedded derivatives are considered in their entirety when determining whether their cash flows are solely payment of principal and interest.

##### *① Debt instruments*

Subsequent measurement of debt instruments depends on the Group's business model for managing the asset and the cash flow characteristics of the asset. The Group classifies its debt instruments into one of the following three measurement categories.

##### *(a) Amortized cost*

Assets that are held for collection of contractual cash flows where those cash flows represent solely payments of principal and interest are measured 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.

##### *(b) Fair value through other comprehensive income*

Assets that are held for collection of contractual cash flows and for selling the financial assets, where the assets' cash flows represent solely payments of principal and interest, are measured at fair value through other comprehensive income. These assets are subsequently measured at fair value. Interest income is 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 other

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comprehensive income. On derecognition, gains and losses accumulated in other comprehensive income are reclassified to profit or loss.

#### (c) Fair value through profit or loss

Assets that do not meet the criteria for amortized cost or fair value through other comprehensive income are measured at fair value through profit or loss. 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 other comprehensive income and are not reclassified to profit or loss.

#### ② *Equity instruments*

The Group subsequently measures all equity investments at fair value. Where the Group's management has elected to present fair value gains and losses on equity investments, which held for long-term investment or strategic purpose, in other comprehensive income, there is no subsequent reclassification of fair value gains and losses to profit or loss following the derecognition of the investment. Dividend income from such investments continue to be recognized in profit or loss as 'finance income' when the right to receive payments is established.

Changes in the fair value of financial assets at fair value through profit or loss are recognized in 'other income and expenses' in the statement of profit or loss as applicable. Impairment loss (reversal of impairment loss) on equity investments measured at fair value through other comprehensive income are not reported separately from other changes in fair value.

#### 3) *Impairment*

The Group assesses on a forward-looking basis the expected credit losses associated with its debt instruments carried at amortized cost and fair value through other comprehensive income. The impairment methodology applied depends on whether there has been a significant increase in credit risk. For trade receivables and lease receivables, the Group applies the simplified approach, which requires expected lifetime credit losses to be recognized from initial recognition of the receivables.

#### 4) *Derecognition*

If a transfer does not result in derecognition because the Group has retained substantially all the risks and rewards of ownership of the transferred asset, the Group continues to recognize the transferred asset in its entirety and recognizes a financial liability for the consideration received. The Group classified the financial liability as "borrowings" in the statement of financial position.

#### 5) *Offsetting of financial instruments*

Financial assets and liabilities are offset and the net amount reported in the statement of financial position where there is a legally enforceable right to offset the recognized amounts and there is an intention to settle on a net basis or realize the assets and settle the liability simultaneously. The legally

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enforceable right must not be contingent on future events and must be enforceable in the normal course of business and in the event of default, insolvency or bankruptcy of the Group or the counterparty.

#### 2.6 Financial Liabilities

##### 1) *Classification and measurement*

The Group's financial liabilities at fair value through profit or loss are financial instruments held for trading. A financial liability is held for trading if it is incurred principally for the purpose of repurchasing in the near term. A derivative that is not a designated as hedging instruments and an embedded derivative that is separated are also classified as other financial liabilities.

The Group classifies non-derivative financial liabilities, except for financial liabilities at fair value through profit or loss, financial guarantee contracts and financial liabilities that arise when a transfer of financial assets does not qualify for derecognition, as financial liabilities carried at amortized cost and present as 'trade and other payables', and 'borrowings' in the statement of financial position.

##### 2) *Derecognition*

Financial liabilities are removed from the statement of financial position when it is extinguished; for example, when the obligation specified in the contract is discharged or cancelled or expired or when the terms of an existing financial liability are substantially modified. The difference between the carrying amount of a financial liability extinguished or transferred to another party and the consideration paid (including any non-cash assets transferred or liabilities assumed) is recognized in profit or loss.

##### 3) *Financial guarantee contract liabilities*

Financial guarantee contracts are contracts that require the issuer to make specified payments to reimburse the holder for a loss incurred because a specified debtor fails to make payments when due in accordance with the terms of debt instruments.

Financial guarantee contract liabilities are initially measured at their fair values and, if not designated as at fair value through profit or loss, are subsequently measured at the higher of:

- ① the amount determined in accordance with the expected credit loss model under Korean IFRS 1109 *Financial Instruments* and
- ② the amount initially recognized less, where appropriate, the cumulative amount of income recognized in accordance with Korean IFRS 1115 *Revenue from Contracts with Customers*

#### 2.7 Compound Financial Instruments

The liability component and equity component of compound financial instruments issued by the Group

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are separately classified based on the substance of the contractual terms. The compound financial instruments issued by the Group are classified and presented separately as the financial liability component and equity conversion option which can be converted into equity instruments at the option of the holder. The liability component of the compound instruments is recognized initially at the fair value of a similar bond that does not have an equity conversion option, and subsequently recognized at amortized cost by applying the effective interest rate until extinguished on conversion or maturity of the bonds. The equity component is determined by deducting the amount of the liability component from the fair value of the compound instrument as a whole. This is recognized and included in equity, net of income tax effects, and is not subsequently remeasured. If it is classified not as equity component but as derivatives, it is regarded as embedded derivatives estimated at the fair value of the same derivatives or calculated from a reasonable valuation model. The subsequent gains or losses arising from its fair value fluctuation are recognized in profit or loss.

#### **2.8 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 and are presented as net of allowance for doubtful accounts, estimated on an individual basis based on past bad debt experience.

#### **2.9 Inventories**

Inventories are stated at the lower of cost or net realizable value. Cost of inventories includes fixed and variable manufacturing overheads allocated to inventories by the most appropriate method of each category. The cost of inventories is determined by the gross average method (the specific identification method for materials in transit). And during the year, perpetual inventory systems are used to value inventories, which are adjusted to physical inventory counts performed at the end of the year.

The Group periodically reviews changes in net realizable value of inventories (current replacement cost for raw materials) due to damage, obsolescence, decline in selling prices and others and recognizes loss on inventory valuation. Loss on inventory valuation is charged to cost of goods sold when it is ordinary and to other non-operating expense when it is extraordinary. When the previous circumstances that caused the loss on inventory valuation no longer exist and the new market value of inventories subsequently exceeds the carrying amount, the valuation loss is reversed to the extent not exceeding the initial carrying amount, and the reversal is deducted from cost of goods sold or other non-operating expenses.

#### **2.10 Property, Plant and Equipment**

Property, plant and equipment are initially measured at cost and after initial recognition, are stated at cost, less subsequent accumulated depreciation and accumulated impairment losses except for lands to which the revaluation model is applied. When useful life of a certain part of property, plant and equipment is different compared to that of the whole asset, such part is recognized as a separate

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asset. The historical cost includes expenditure that is directly attributable to the acquisition of the item, including estimated costs of dismantling, removing or restoring the assets at the end of the expected useful life.

Subsequent costs, incurred to replace a part of previously recognized item of property, plant and equipment, are added to the carrying amount of an asset, or recognized as a separate asset, if it is probable that future economic benefits associated with the assets will flow into the Group and the cost of an asset can be measured reliably. In such cases, the carrying amount of what was replaced is derecognized accordingly. Routine maintenance and repairs are expensed as incurred through profit or loss.

Depreciation of all property, plant and equipment, except for land, is calculated using the straight-line method, which reflects the best estimate of the expected consumption pattern of future economic benefits inherent in the asset, to allocate their cost, net of their residual values.

The Group depreciates property, plant and equipment with a limited useful life over the following periods:

	<u>Estimated useful life (years)</u>
Buildings	20 – 40
Structures	10 – 20
Machinery	5 – 15
Vehicles	5
Tools	5
Office equipment	3 – 10

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

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.

When the carrying amount of property, plant and equipment is higher than the recoverable amount, the carrying amount is adjusted to the recoverable amount and the difference is recognized as an impairment loss. Meanwhile, when the recoverable amount subsequently exceeds the carrying amount of the impaired asset, the excess is recorded as a reversal of impairment loss to the extent that the reversed asset does not exceed the carrying amount before the previous impairment, as adjusted by depreciation. Upon derecognition of a property, plant and equipment, the difference between the net disposal amount and carrying amount of the item is recognized as other non-operating income or expense.

**2.11 Intangible Assets**

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

Intangible assets, except for goodwill and those with indefinite useful lives, are amortized using the straight-line method with no residual value, with amortization beginning when the asset is available for use, over their estimated useful lives as follows. However, Membership rights that have an indefinite useful life are not subject to amortization because there is no foreseeable limit to the period over which the assets are expected to be utilized. Instead of being amortized they are tested for impairment in each reporting period.

	<u>Estimated useful life (years)</u>
Industrial rights	5 – 10
Development costs	5 – 7
Other intangible assets	3 – 5

Goodwill acquired through business combinations refers to the consideration paid in excess of the fair value of the Group's share of the identifiable net assets of the subsidiary on the date of acquisition. Goodwill recognized from the acquisition of certain subsidiary, is classified as intangible assets. Goodwill is tested for impairment annually and carried at the historical cost at the date of business acquisition, less accumulated impairment losses. Impairment loss recognized for goodwill is not reversed. For the purpose of impairment testing, goodwill is allocated to each of the Group's cash-generating units (or groups of cash-generating units) that is expected to benefit from the synergies of the combination.

Expenditures relating to development activities are capitalized when the results of development plan were for new product developments or substantial improvement of functions of existing products, there is technical and commercial feasibility of completing the development and the Group has the ability to measure the expenditures attributable to the development with reliability. Capitalized development costs include expenditure on materials, salaries and related overhead cost that is reasonably allocated. Capitalized development costs are presented at the acquisition cost, less accumulated amortization and accumulated impairment losses. Capitalized development costs are amortized using the straight-line method over the estimated useful life and amortization expenses are included in cost of goods and selling and administrative expenses. The expenditure on research and development, which does not meet conditions noted above, is expensed through profit or loss when it is incurred.

The estimated useful life and amortization method for intangible assets with finite useful lives are reviewed at the end of each reporting period. For intangible assets with indefinite useful life, 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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#### 2.12 Investment Property

Investment property is property held to earn rentals or for capital appreciation or both. An investment property is measured initially at its cost, including transaction cost incurred in acquiring the asset. An investment property is measured after initial measurement at depreciated cost (less any accumulated impairment losses). After recognition as an asset, investment property is carried at cost less accumulated depreciation and impairment losses. The Group depreciates investment properties, except for land, using the straight-line method over their useful lives of 40 years.

The estimated useful lives, residual values and depreciation method are reviewed at the end of each reporting period, with the effect of any changes in estimate being accounted for as a change in accounting estimate.

#### 2.13 Borrowing Costs

Borrowing costs that are directly attributable to the acquisition, construction or production of a qualifying asset are capitalized during the period of time that is required to complete and prepare the asset for its intended use. Other borrowing costs are expensed in the period in which they are incurred.

#### 2.14 Impairment of Non-financial Assets

Goodwill and intangible assets that have an indefinite useful life are not subject to amortization and are tested annually for impairment. Other assets are tested for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognized for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs of disposal and value in use. For the purposes of impairment test, assets are grouped at the lowest levels which separately generates identifiable cash flows (cash-generating units). Non-financial assets other than goodwill that suffered an impairment are reviewed for possible reversal of the impairment at the end of each reporting period.

#### 2.15 Trade and Other Payables

These amounts represent liabilities for goods and services provided to the Group prior to the end of reporting period which are unpaid. Trade and other payables are presented as current liabilities, unless payment is not due within 12 months after the reporting period. They are recognized initially at their fair value and subsequently measured at amortized cost using the effective interest method.

#### 2.16 Borrowings

Borrowings are measured initially at fair value, net of transaction costs and subsequently at amortized cost using the effective interest method, with interest expense being recognized on an effective yield basis. The difference between the amount received and the redemption amount is amortized using the effective interest method and recognized in profit or loss. Borrowings are classified as non-current

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liabilities when the Group has an unconditional right to defer settlement of the liability for at least 12 months after the end of the reporting period. Otherwise, borrowings are classified as current liabilities.

#### 2.17 Post-employment benefits

The Group operates both defined contribution and defined benefit pension plans.

A defined benefit plan is a pension plan that is not a defined contribution plan. Generally, post-employment benefits are payable after the completion of employment, and the benefit amount depended on the employee's age, periods of service or salary levels. The liability recognized in the statement of financial position in respect of defined benefit pension plans is the present value of the defined benefit obligation at the end of the reporting period less the fair value of plan assets. The defined benefit obligation is calculated annually by independent actuaries using the projected unit credit method. The present value of the defined benefit obligation is determined by discounting the estimated future cash outflows using interest rates of high-quality corporate bonds that are denominated in the currency in which the benefits will be paid, and that have terms approximating to the terms of the related obligation. Remeasurement gains and losses arising from experience adjustments and changes in actuarial assumptions are recognized in the period in which they occur, directly in other comprehensive income. Changes in the present value of the defined benefit obligation resulting from plan amendments or curtailments are recognized immediately in profit or loss as past service costs.

Contributions to defined contribution plans are recognized as an expense when employees have rendered service that entitles them to the contributions.

#### 2.18 Provisions and Contingent Liability

Provisions are recognized when 1) the Group has a present obligation (legal or constructive) as a result of a past event, 2) it is probable that the Group will be required to settle the obligation 3) and a reliable estimate can be made for the amount of the obligation. The amount of the provision is measured as present value of the prospective cash flows estimated to settle the present obligation when the difference between the face value and present value is material. At the end of each reporting period, the remaining provision balance is reviewed and assessed to determine whether the current best estimate is being recognized. The increase in provision due to passage of time is recognized as interest expense. If the existence of an obligation to transfer economic benefit is no longer probable, the related provision is reversed during the period. When some or all of the economic benefits required to settle a provision are expected to be recovered from a third party, a receivable is recognized as an asset if it is virtually certain that reimbursement will be received and the amount of the receivable can be measured reliably. In this case, profit from reimbursement is offset against the expense incurred in the recognition of provision through profit or loss.

#### 2.19 Derivative Instruments

Derivatives are initially recognized at fair value on the date when a derivative contract is entered into and are subsequently remeasured at their fair value at the end of each reporting period. Changes in

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the fair value of any derivative instrument that does not qualify for hedge accounting are recognized immediately in profit or loss within 'other non-operating income (expenses)' or 'finance income (costs)' based on the nature of transactions.

- hedges of the fair value of recognized assets or liabilities or a firm commitment (fair value hedges)
- hedges of a particular risk associated with the cash flows of recognized assets and liabilities and highly probable forecast transactions (cash flow hedges), or
- hedges of a net investment in a foreign operation (net investment hedges)

At inception of the hedge relationship, the Group documents the economic relationship between hedging instruments and hedged items including whether changes in the cash flows of the hedging instruments are expected to offset changes in the cash flows of hedged items.

The full fair value of a hedging derivative is classified as a non-current asset or liability when the remaining maturity of the hedged item is more than 12 months; it is classified as a current asset or liability when the remaining maturity of the hedged item is less than 12 months. A non-derivative financial asset and a non-derivative financial liability is classified as a current or non-current based on its expected maturity and its settlement, respectively.

#### 2.20 Dividend

Dividend payable is recognized as liability when declaration of the dividend is approved at the shareholders' meeting.

#### 2.21 Share-based Payment Arrangement

The Group recognizes share options granted to employees at the fair value at the grant date. The fair value determined at the grant date of the share option is expensed on a straight-line basis over the vesting period, reflecting the expected rate of the share option's right extinction.

#### 2.22 Revenue Recognition

In accordance with K-IFRS 1115, the Group recognizes revenue from all types of the contracts by using the five-step revenue recognition model. The five-step revenue recognition model is as follows:

- Identify contracts with customers
- Identify the separate performance obligation
- Determine the transaction price of the contract
- Allocate the transaction price to each of the separate performance obligations, and

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- Recognize the revenue as each performance obligation is satisfied.

#### *(1) Identify the separate performance obligation*

The Group generally separates contracts to recognize revenue from service rendered, apart from sales of goods or products. The Group determines standard warranty coverage periods per product and country considering warranty periods required by law and others when entering into contracts with customers for the sales of products. If a customer has the option to purchase an additional warranty separately beyond the standard warranty coverage period, the warranty is considered as a separate performance obligation when revenue is recognized.

#### *(2) Performance obligation satisfied at a point in time*

Revenue on sales of goods is recognized when the products have been delivered to the customer. Delivery does not occur until the products have been shipped to the specified location, the risks of obsolescence and loss have been transferred to the customer, and the customer has accepted the products in accordance with the sales contract or the acceptance provisions have lapsed or the Group has objective evidences that all criteria for acceptance have been satisfied.

#### *(3) Sales with a right of return*

In accordance with K-IFRS 1115, the Group estimates an amount of variable consideration by using the expected value which the Group expects to better predict the amount of consideration. The Group recognize revenue with transaction price including variable consideration only to the extent that it is highly probable that a significant reversal in the amount of cumulative revenue recognized will not occur when the refund period has lapsed. The refund liability is measured at the amount of consideration received for which the Group does not expect to be entitled.

#### *(4) Revenue Recognition using percentage of completion method*

##### *① A performance obligation satisfied over time*

In accordance with Korean IFRS 1115, the Group recognizes revenue over time 1) if the customer simultaneously receives and consumes the benefits provided by the Group's performance as the Group performs or 2) the Group's performance creates or enhances an asset that the customer controls as the asset is created or enhanced or 3) the Group 's performance does not create an asset with an alternative use to the Group and the Group has an enforceable right to payment for performance completed to date.

##### *② Methods for measuring progress*

When measuring the progress of performance obligations satisfied over time, the Group considers the characteristics of the goods or services promised to the customer and determines one of the following methods:

- Output methods: Revenue is recognized on the basis of direct measurements of the value to

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the customer of the goods or services transferred to date relative to the remaining goods or services promised under the contract.

- Input methods: Revenue is recognised on the basis of the entity's efforts or inputs to the satisfaction of a performance obligation relative to the total expected inputs to the satisfaction of that performance obligation.

#### 2.23 Government Grants

Grants from the government are recognized at their fair value where there is a reasonable assurance that the grant will be received and the Group will comply with all attached conditions. Government grants related to assets are presented in the statement of financial position by deducting the grant in arriving at the carrying amount of the asset, and government grants related to income are deferred and later deducted from the related expense.

#### 2.24 Current and Deferred Tax

The tax expense for the period consists of current and deferred tax. Current and deferred tax is recognized in profit or loss, except to the extent that it relates to items recognized in other comprehensive income or directly in equity. In this case, the tax is also recognized in other comprehensive income or directly in equity, respectively.

The current income tax expense is measured at the amount expected to be paid to the taxation authorities, using the tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period. Management periodically evaluates positions taken in tax returns with respect to situations in which applicable tax regulation is subject to interpretation. The Group recognizes current income tax on the basis of amounts expected to be paid to the tax authorities.

Deferred income tax is provided in full, using the liability method, on temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the consolidated financial statements. However, deferred income tax is not accounted for if it arises from initial recognition of an asset or liability in a transaction other than a business combination that at the time of the transaction affects neither accounting profit nor taxable profit or loss.

Deferred tax assets are recognized only if it is probable that future taxable amounts will be available to utilize those temporary differences and losses.

The Group recognizes a deferred tax liability all taxable temporary differences associated with investments in subsidiaries, associates, and interests in joint arrangements, except to the extent that the Group is able to control the timing of the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. In addition, The Group recognizes a deferred tax asset for all deductible temporary differences arising from such investments to the extent that it is probable the temporary difference will reverse in the foreseeable future and taxable profit will be available against which the temporary difference can be utilized.

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Deferred tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets and liabilities and when the deferred tax balances relate to the same taxation authority. Current tax assets and tax liabilities are offset when the Group has a legally enforceable right to offset and intends either to settle on a net basis, or to realize the assets and settle the liability simultaneously.

#### **2.25 Earnings per Share**

Basic earnings per common share are computed by dividing net income attributable to owners of the Group by the weighted-average number of common shares outstanding during the period. Diluted earnings per common share are computed by dividing diluted net income attributable to the owners of the Group, which is adjusted by adding back the after-tax amount of expenses related to dilutive potential ordinary shares, by weighted-average number of common shares and dilutive potential ordinary shares outstanding during the period. Anti-dilutive potential ordinary shares are disregarded in the calculation of diluted earnings per share.

#### **2.26 Assets Held for sale**

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

Non-current assets that are classified either as held for sale or as a part of a disposal group classified as held for sale are not depreciated (or amortized). If the fair value, less costs to sell, of the non-current assets, or disposal groups, held for sale decreases, impairment loss is recognized immediately through profit or loss. When it increases subsequently, the gain is recognized at the amount not exceeding the accumulated impairment loss.

#### **2.27 Lease**

##### *Lessor accounting under Korean IFRS 1116*

At commencement or on modification of a contract that contains a lease component, the Group allocated the consideration in the contract to each lease component on the basis of its relative stand-alone price.

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 incidental to ownership of the underlying asset. If most of the risks and rewards incidental to 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 part of this assessment, the Group considers whether the lease term is for the major part of the economic life of the underlying asset.

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When the Group is an intermediate lessor, it accounts for its interests in the head lease and the sublease separately. In addition, the classification of a lease is determined by the right-of-use asset arising from the head lease, not the underlying asset. If a head lease is a short-term lease to which the Group applies the recognition exemption, then the sub-lease is classified as an operating lease.

The Group has applied Korean IFRS 1115 '*Revenue from Contracts with Customers*' to allocate consideration in the contract to each lease and non-lease components.

The Group applies the Korean IFRS 1109 '*Derecognition and Impairment*' in relation to net investment in the lease (Note 2.5). The Group regularly reviews the estimated unguaranteed residual values used in computing the lessor's gross investment in the lease.

Lease income from operating leases where the Group is a lessor is recognized in income on a straight-line basis over the lease term.

#### *Lessee accounting under Korean IFRS 1116*

Contracts may contain both lease and non-lease components. The Group allocates the consideration in the contract to the lease and non-lease components based on their relative stand-alone prices. However, for leases of real estate for which the Group is lessee, the Group applies the practical expedient which has elected not to separate lease and non-lease components and instead accounts for these as a single lease component.

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

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

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

- Fixed payments (including in-substance fixed payments), less any lease incentives receivable
- Variable lease payment that are based on an index or a rate, initially measured using the index or rate as at the commencement date
- Amounts expected to be payable by the Group (the lessee) under residual value guarantees

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- The exercise price of a purchase option if the Group (the lessee) is reasonably certain to exercise that option, and
- Payments of penalties for terminating the lease, if the lease term reflects the Group (the lessee) exercising that option

Also, lease liabilities are measured including lease payments to be paid in accordance with an extension option which is reasonably certain to exercise.

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

To determine the incremental borrowing rate, the Group:

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

If a readily observable amortizing loan rate is available to the individual lessee (through recent financing or market data) which has a similar payment profile to the lease, then the Group uses that rate as a starting point to determine the incremental borrowing rate.

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

Each lease payment is allocated between the liability and finance cost. The finance cost is charged to profit or loss over the lease period so as to produce a constant periodic rate of interest on the remaining balance of the liability for each period.

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

- the amount of the initial measurement of lease liability
- any lease payments made at or before the commencement date less any lease incentives received
- any initial direct costs, and
- restoration costs

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

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asset is depreciated over the underlying asset's useful life. The Group elected not to apply that revaluation model to right-of-use assets held by the Group, but apply cost model.

Payments associated with short-term leases and leases of low-value assets are recognized on a straight-line basis as an expense in profit or loss.

#### **2.28 Segment Reporting**

Information of each operating segment is reported in a manner consistent with the internal business segment reporting provided to the chief operating decision-maker. The chief operating decision-maker is responsible for allocating resources and assessing performance of the operating segments.

#### **2.29 Accounting Treatment Related to the Emission Rights Cap and Trade Scheme**

The Group classifies the emission rights as intangible assets. The allowance received free of charge from the government are measured at zero, while those purchased are measured at acquisition cost. Also, if the emission rights granted free of charge by the government in relation to certain implementation year are sufficient to fulfill the obligation under the emission liability of current period, the emission liability is measured as zero. However, if there is a shortage, Emissions obligations are measured as the sum of the carrying amount of the allocated allowances that will be the best estimate of expenditure required to settle the obligation at the end of reporting period for any excess emission.

#### **2.30 Approval of Issuance of the Financial Statements**

The consolidated financial statements 2022 were approved for issue by the Board of Directors on February 3, 2023 and are subject to change with the approval of shareholders at their Annual General Meeting on March 27, 2023.

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#### 3. Critical Accounting Estimates and Assumptions

The preparation of the consolidated financial statements requires the Group to make estimates and assumptions concerning the future. Management also needs to exercise judgement in applying the Group's accounting policies. Estimates and assumptions are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. As the resulting accounting estimates will, by definition, seldom equal the related actual results, it can contain a significant risk of causing a material adjustment.

The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are discussed below. Additional information of significant judgement and assumptions of certain items are included in relevant notes.

##### *(1) Provisions for warranty*

The Group provides warranty for products when the related revenue is recognized. At the end of each reporting period, provisions are recorded at the best estimated costs to settle current and future warranty obligations. The Group continuously introduces new products using advanced complex technology, and accordingly, these estimates may change in future due to additional provisions required under local legislation and practice.

##### *(2) Allowance for doubtful accounts of receivables*

In order to calculate the impairment of receivables, the management of the Group estimates an expected bad debt considering the aging of receivables, past experience of bad debt and economic and industrial factors.

##### *(3) Impairment of capitalized development cost*

The Group performs an assessment for impairment of capitalized development costs at the end of each reporting period by reviewing project's business forecast, technical feasibility and future economic benefit. The assessment on indication of impairment or calculation of recoverable amount of capitalized development costs involves management's estimates and judgments.

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#### 4. Financial Risk Management

The purpose of the Group's financial risk management is to improve financial structure and efficiency of fund management to create stable and sustainable management performance even under various financial risks such as market risk, credit risk and liquidity risk.

Financial risk management activities are mainly managed by the finance department, and, in close cooperation with the relevant departments, the department is engaged in activities such as identification, valuation and hedging of financial risks, and focusing on minimizing the impact of financial risks through regular monitoring.

##### (1) Market Risk

###### 1) *Foreign exchange risk*

The Group is exposed to foreign exchange risk as it makes international transactions in foreign currencies. Foreign exchange risk arises from forecast transactions, recognized assets and liabilities and net investments in foreign operations.

Foreign exchange risk is managed by the Group's Regulation on foreign currencies. The Group's basis for foreign currency management is to reduce the volatility of profit or loss. The Group reduces exposure to foreign exchange risk by matching the inflow and the outflow of foreign currencies (natural hedge), and manages foreign exchange risk by using currency derivatives, such as currency forwards, for the remaining exposures.

###### 2) *Interest rate risk*

The Group's interest rate risk is related to borrowings and bank deposits with floating interest rates, and the related interest income and expense are exposed to interest rate risk. Borrowings and bank deposits with fixed interest rates do not have influence on current profit or loss and equity due to the changes in market interest rates.

To manage the Group's interest rate risk in advance, the Group tries to minimize external borrowings by using internal funds, reducing borrowings with high interest rates, improving the structure of long-term and short-term borrowings, maintaining the appropriate balance between borrowings with floating interest rate, and fixed interest rate and regularly monitoring domestic and international interest rate changes with action plans.

###### 3) *Price risk*

The Group is exposed to equity securities price risk arises from investments held by the Group that are classified either as at fair value in the consolidated statement of financial position.

# Hyundai Doosan Infracore Co., Ltd. and Subsidiaries

## Notes to the Consolidated Financial Statements

### December 31, 2022 and 2021

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#### **(2) Credit Risk**

Credit risk arises during the normal course of transactions and investing activities where customers or other parties are unable to comply with contractual obligations. The Group sets out and monitors credit limits for its customers and counterparts on a periodic basis considering financial conditions, historical experiences and other factors.

Credit risk arises from cash and cash equivalents, derivatives and deposits with banks and financial institutions, as well as credit exposures to major customers, including receivables and definite term contracts.

Main objectives of credit risk management are to efficiently manage credit risk based on the Group's credit policies, to promptly support decision-making processes and to minimize financial losses through safeguarding receivables. Where default is expected for receivables that represents impairment indicators or are past due at the end of reporting period, the Group assesses related credit risk and reflects it on allowances in its consolidated statement of financial position.

Receivables with specific impairment indicators such as insolvency and bankruptcy are individually assessed using appropriate allowance rates. A group of financial assets with similar credit risk natures that are not individually significant is assessed on a collective basis based on aging analysis and the Group's historical experience on collection.

#### **(3) Liquidity Risk**

Liquidity risk represents the risk that the Group may encounter difficulties in fulfilling its obligations to repay financial liabilities or in being not able to have additional funding for its normal business operations due to liquidity shortage.

The Group prepares cash flow budgets for a three-month period as well as annual fiscal year to forecast cash flows from operating, investing and financing activities. Through these forecasts, the Group secures and maintains an appropriate level of liquidity volume and accordingly manages liquidity risk in advance.

#### **(4) Capital Risk**

The Group's objectives when managing capital are to safeguard the Group's ability to continue as a going concern, so the Group can continue to provide returns for shareholders and benefits for other stakeholders, and to maintain an optimal capital structure to reduce the cost of capital.

In order to maintain or adjust the capital structure, the Group may adjust the amount of dividends paid to shareholders, return capital to shareholders, issue new shares or sell assets to reduce debt. Consistent with others in the industry, the Group monitors capital on the basis of the gearing ratio. This ratio is calculated as total debt divided by total equity.

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Gearing ratios and net borrowing to equity ratio as at December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	<b>December 31, 2022</b>		<b>December 31, 2021</b>	
Debt	₩	3,101,627	₩	3,412,466
Equity		1,635,041		1,369,824
Savings <sup>1</sup>		352,212		625,289
Borrowings <sup>2</sup>		1,572,199		1,759,700
Debt-to-equity ratio		189.70%		249.12%
Net borrowing-to-equity ratio <sup>3</sup>		74.62%		82.81%

<sup>1</sup> It consists of cash and cash equivalents and short-term and long-term financial instruments.

<sup>2</sup> For bonds, discount on bonds are deducted from the face value of bonds.

<sup>3</sup> (borrowings-deposits)/equity

The interest coverage ratio and basis of calculation for the years ended December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	<b>December 31, 2022</b>		<b>December 31, 2021<sup>1</sup></b>	
1. Operating profit	₩	332,547	₩	264,508
2. Interest expenses		75,660		94,329
3. Interest coverage ratio (1/2)		4.40		2.80

# Hyundai Doosan Infracore Co., Ltd. and Subsidiaries

## Notes to the Consolidated Financial Statements

### December 31, 2022 and 2021

#### 5. Cash and Cash Equivalents

Cash and cash equivalents as at December 31, 2022 and 2021, consist of:

<i>(in millions of Korean won)</i>	<b>December 31, 2022</b>		<b>December 31, 2021<sup>1</sup></b>	
Cash	₩	2,071	₩	2,393
Current deposits		1,111		12,492
Others (MMDA and others)		295,193		530,498
Total	₩	<u>298,375</u>	₩	<u>545,383</u>

#### 6. Short-term and Long-term Financial Instruments

Short-term and long-term financial investments as at December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	<b>December 31, 2022</b>				<b>December 31, 2021</b>			
	Current		Non-current		Current		Non-current	
Financial assets at amortized cost	₩	60,534	₩	8,596	₩	78,639	₩	16,615
Financial assets at fair value through profit or loss		550		2,778		8		2,818
Financial assets at fair value through other comprehensive income		-		935		-		935
Total	₩	<u>61,084</u>	₩	<u>12,309</u>	₩	<u>78,647</u>	₩	<u>20,368</u>

#### 7. Restricted Financial Instruments

Details of restricted financial instruments as at December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	<b>December 31, 2022</b>		<b>December 31, 2021</b>		<b>Description</b>
Short-term financial assets	₩	7,376	₩	10,902	Debt deposits
		43,500		43,500	Win-win Growth Fund
		512		383	Others
Long-term financial assets		8		11	Bank transaction deposits
		-		1,278	Pledged for borrowings
Total	₩	<u>51,396</u>	₩	<u>56,074</u>	

#### 8. Trade and Other Receivables

**Hyundai Doosan Infracore Co., Ltd. and Subsidiaries**  
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(1) Trade and other receivables as at December 31, 2022 and 2021, consist of the following:

(in millions of Korean won)

	December 31, 2022		December 31, 2021	
	Current	Non-current	Current	Non-current
Trade receivables:				
Trade receivables <sup>1</sup>	₩ 748,052	₩ 7,256	₩ 656,389	₩ 7,829
Provision for impairment	(99,779)	-	(103,801)	-
Financial lease receivables	549,912	-	763,831	-
Provision for impairment	(14,303)	-	(10,192)	-
Subtotal	1,183,882	7,256	1,306,227	7,829
Other receivables:				
Other receivables <sup>2</sup>	205,294	8,556	236,191	4,213
Provision for impairment	(54,043)	(4,746)	(53,629)	(4,213)
Accrued income	5,943	-	4,876	-
Loans	-	-	1	-
Deposits	10,502	22,234	2	38,403
Provision for impairment	-	(152)	-	(156)
Subtotal	167,696	25,892	187,441	38,247
Total	₩ 1,351,578	₩ 33,148	₩ 1,493,668	₩ 46,076

<sup>1</sup> The Group recognizes the transfer of trade receivable as collateralized borrowing for those that do not meet the requirements for the elimination of financial instruments (Note 22).

<sup>2</sup> As at December 31, 2022, third-party reimbursable assets of ₩ 5,375 million was recognized in relation to the payment of provision for warranty.

(2) Changes in provision for impairment for the years ended December 31, 2022 and 2021, are as follows:

(in millions of Korean won)

	2022			
	Beginning balance	Provision for allowance	Others <sup>1</sup>	Ending balance
Trade receivables	₩ 103,801	₩ 653	₩ (4,675)	₩ 99,779
Financial lease receivables	10,192	4,894	(783)	14,303
Other receivables	53,629	951	(537)	54,043
Long-term other receivables	4,213	533	-	4,746
Long-term deposits	156	-	(4)	152
Total	₩ 171,991	₩ 7,031	₩ (5,999)	₩ 173,023

<sup>1</sup> Includes gain or loss arising from changes in foreign exchange rates.

(in millions of Korean won)

2021

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	Beginning balance	Provision for allowance	Spin-off	Others <sup>1</sup>	Ending balance
Trade receivables	₩ 215,442	₩ 4,762	₩ (10,988)	₩ (105,415)	₩ 103,801
Financial lease receivables	8,192	757	-	1,243	10,192
Other receivables	52,301	419	(1)	910	53,629
Long-term other receivables	4,148	65	-	-	4,213
Long-term deposits	201	1	-	(46)	156
Total	₩ 280,284	₩ 6,004	₩ (10,989)	₩ (103,308)	₩ 171,991

<sup>1</sup> Includes gain or loss arising from changes in foreign exchange rates.

**9. Finance Lease**

(1) Gross investment in finance lease and present value of minimum lease payments as at December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	December 31, 2022	December 31, 2021
Within one year	₩ 452,287	₩ 536,530
Later than one year but not later than five years	110,275	244,444
Total	₩ 562,562	₩ 780,974
Present value of minimum lease payments	₩ 549,912	₩ 763,830

(2) Unearned finance income of finance lease as at December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	December 31, 2022	December 31, 2021
Gross investment in the lease	₩ 562,562	₩ 780,974
Net investment in the lease <sup>1</sup>	549,912	763,830
Unearned finance income	₩ 12,650	₩ 17,144

<sup>1</sup> In relation to the above lease, there is no unguaranteed residual value as at December 31, 2022, and there are no contingent rental payments incurred during the year ended December 31, 2022

(3) Gain or loss related to finance lease for the years ended at December 31, 2022 and 2021, is as follows:

<i>(in millions of Korean won)</i>	2022	2021
Interest income from finance lease	₩ 20,229	₩ 16,561
Commissions received from finance lease	33,276	44,524

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Total	₩	53,505	₩	61,085
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**10. Inventories**

Inventories as at December 31, 2022 and 2021, are as follows:

*(in millions of Korean won)*

	December 31, 2022			December 31, 2021		
	Acquisition cost	Valuation allowance	Carrying amount	Acquisition cost	Valuation allowance	Carrying amount
Merchandise	₩ 362,967	₩ (21,933)	₩ 341,034	₩ 217,862	₩ (18,656)	₩ 199,206
Finished goods	232,117	(8,287)	223,830	332,619	(12,315)	320,304
Semi-finished goods	100,450	(748)	99,702	68,174	(562)	67,612
Work in progress	43,671	-	43,671	43,015	-	43,015
Raw materials	299,222	(7,308)	291,914	251,572	(6,941)	244,631
Supplies	2,476	(1)	2,475	2,191	(2)	2,189
Materials in transit	312,548	-	312,548	200,627	-	200,627
Total	₩ 1,353,451	₩ (38,277)	₩ 1,315,174	₩ 1,116,060	₩ (38,476)	₩ 1,077,584

Inventories recognized as cost of goods sold during the year ended December 31, 2022, amounted to ₩ 3,480,483 million (2021: ₩ 3,434,924 million). Reversal of loss on valuation of inventories deducted from cost of goods sold amounted to ₩ 199 million for the same period (For 2021, Loss on valuation of inventories: ₩ 2,130 million).

# Hyundai Doosan Infracore Co., Ltd. and Subsidiaries

## Notes to the Consolidated Financial Statements

### December 31, 2022 and 2021

#### 11. Other Assets

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

(in millions of Korean won)

	December 31, 2022				December 31, 2021			
	Current		Non-current		Current		Non-current	
Prepayments	₩	6,580	₩	3,514	₩	9,459	₩	5,239
Prepaid expenses		21,041		-		17,854		-
Prepaid tax		7,787		-		2,449		-
Right of return asset		3,961		-		3,231		-
Others		28,450		-		9,682		-
Total	₩	67,819	₩	3,514	₩	42,675	₩	5,239

#### 12. Interests in Associates and Joint ventures

(1) Details of investments in associates and joint ventures of the Group as at December 31, 2022 and 2021, that are material to the Group, are summarized as follows:

(in millions of Korean won)

Name of entity	Location	Month of financial statements	Type of business	December 31, 2022		December 31, 2021	
				Percentage of ownership (%)	Carrying amount	Percentage of ownership (%)	Carrying amount
Associates:							
Potenit Co.,Ltd. <sup>1</sup>	Korea	December	Manufacturing	18.78	₩ -	19.41	₩ -
Joint ventures:							
Tianjin Lovol Doosan Engine Co., Ltd. <sup>2</sup>	China	December	Manufacturing and Sales	-	₩ -	50.00	₩ -
Doosan Infracore Liaoning Machinery Sales Co., Ltd	China	December	Sales of excavator	43.00	296	43.00	394
Total					₩ 296		₩ 394

<sup>1</sup> It was recognized as impairment loss as at December 31, 2019.

<sup>2</sup> It was recognized as impairment loss for the year ended December 31, 2021 and was reclassified as a subsidiary as the Group acquired 50% of residual shares for the year ended December 31, 2022.

**Hyundai Doosan Infracore Co., Ltd. and Subsidiaries**  
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(2) The tables below provide summarized financial information for investment in major joint ventures.

(in millions of Korean won)

		December 31, 2022										
		Current assets	Non-current assets	Current liabilities	Equity	Sales	Operating income (loss)	Profit (loss) for the year	Total comprehensive income			
Doosan Infracore												
Liaoning Machinery Sales Co., Ltd	₩	3,479	₩ 40	₩ 2,713	₩ 806	₩ 8,060	₩ (251)	₩ (251)	₩	₩	(251)	

(in millions of Korean won)

		December 31, 2022						
		Cash and cash equivalents	Current financial liabilities	Depreciation	Interest expenses			
Doosan Infracore Liaoning Machinery Sales Co., Ltd	₩	138	₩ 835	₩ 25	₩	₩	27	

(in millions of Korean won)

		December 31, 2021										
		Current assets	Non-current assets	Current liabilities	Non-current liabilities	Equity	Sales	Operating income (loss)	Profit (loss) for the year	Total comprehensive income		
Doosan Infracore												
Liaoning Machinery Sales Co., Ltd	₩	3,528	₩ 66	₩ 2,522	₩ -	₩ 1,072	₩ 18,016	₩ 39	₩ 39	₩	39	
Tianjin Lovol Doosan Engine Co., Ltd.		13,402	35,446	7,386	695	40,767	5,411	(8,761)	(8,644)		(8,644)	

(in millions of Korean won)

		December 31, 2021						
		Cash and cash equivalents	Current financial liabilities	Depreciation	Interest income	Interest expenses		
Doosan Infracore Liaoning Machinery Sales Co., Ltd	₩	194	₩ 559	₩ 23	₩ 1	₩	33	
Tianjin Lovol Doosan Engine Co., Ltd.			7,686	-	2,545	67	-	

# Hyundai Doosan Infracore Co., Ltd. and Subsidiaries

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(3) Changes in investment in the Group's associates and joint ventures measured at fair value through profit or loss and using the equity method for the years ended December 31, 2022 and 2021, are as follows:

(in millions of Korean won)

	December 31, 2022				
	Valuation method	Beginning balance	Share of loss	Other changes in equity	Ending balance
Doosan Infracore Liaoning Machinery Sales Co., Ltd	Equity method	₩ 394	₩ (93)	₩ (5)	₩ 296

(in millions of Korean won)

	December 31, 2021							
	Valuation method	Beginning balance	Acquisition	Share of profit (loss)	Equity method impairment	Other changes in equity	Spin-off	Ending balance
Associates:								
Doosan Cuvex Co., Ltd. <sup>1</sup>	Equity method	₩ 67,867	₩ -	₩ 1,013	₩ -	₩ -	₩ (68,880)	₩ -
DBC Co., Ltd. <sup>1</sup>	Equity method	51,752	-	27,403	-	-	(79,155)	-
D20 Capital Fund <sup>1</sup>	Fair value through profit or loss method	4,896	-	-	-	188	(5,084)	-
Ainstein AI, Inc <sup>1</sup>	Equity method	2,176	-	(69)	-	84	(2,191)	-
Sub-total		126,691	-	28,347	-	272	(155,310)	-
Joint ventures:								
Tianjin Lovol Doosan Engine Co. Ltd. <sup>2</sup>	Equity method	16,327	3,604	(3,534)	(18,471)	2,074	-	-
Doosan Infracore Liaoning Machinery Sales Co., Ltd	Equity method	202	-	160	-	32	-	394
Sub-total		16,529	3,604	(3,374)	(18,471)	2,106	-	394
Total		₩ 143,220	₩ 3,604	₩ 24,973	₩ (18,471)	₩ 2,378	₩ (155,310)	₩ 394

<sup>1</sup> For the year ended December 31, 2021, it was spun off.

<sup>2</sup> For the year ended December 31, 2021, the Group acquired additional share of ₩ 3,604 million and ₩ 18,471 million of carrying amount is recognized as impairment loss.

**Hyundai Doosan Infracore Co., Ltd. and Subsidiaries**  
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(4) The tables below provide a reconciliation of the summarized financial information presented to the carrying amount of its interest in the joint venture or associate.

(in millions of Korean won)

	December 31, 2022						
	Net assets at the end of the year (a)	Group's share in % (b)	Group's share in KRW(a*b)	Adjustments		Carrying amount	
				Intergroup transaction	Others		
Doosan Infracore Liaoning Machinery Sales Co., Ltd	₩ 806	43.00	₩ 347	₩ (51)	₩ -	₩ 296	

(in millions of Korean won)

	December 31, 2021						
	Net assets at the end of the year (a)	Group's share in % (b)	Group's share in KRW(a*b)	Adjustments		Carrying amount	
				Intergroup transaction	Others		
Tianjin Lovol Doosan Engine Co., Ltd.	₩ 40,767	50.00	₩ 20,383	₩ (1,912)	₩ (18,471)	₩ -	
Doosan Infracore Liaoning Machinery Sales Co., Ltd	1,072	43.00	461	(67)	-	394	

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**13. Investment Properties**

(1) Changes in investment properties for the years ended December 31, 2022 and 2021, are as follows:

*(in millions of Korean won)*

	2022			2021		
	Land	Building	Total	Land	Building	Total
Beginning balance	₩ 8,994	₩ 2,154	₩ 11,148	₩ 110,928	₩ 24,599	₩ 135,527
Additions	-	-	-	386	78	464
Transfers from the right-of-use assets	-	-	-	-	15,935	15,935
Disposals	-	(96)	(96)	(386)	-	(386)
Depreciation	-	(1,278)	(1,278)	-	(2,097)	(2,097)
Impairment loss	-	-	-	(830)	(481)	(1,311)
Reversal of impairment loss	-	-	-	96	-	96
Spin-off	-	-	-	(101,204)	(28,363)	(129,567)
Others	45	-	45	4	(7,517)	(7,513)
Ending balance	₩ 9,039	₩ 780	₩ 9,819	₩ 8,994	₩ 2,154	₩ 11,148
Acquisition cost	₩ 26,859	₩ 2,203	₩ 29,062	₩ 26,571	₩ 4,689	₩ 31,260
Accumulated depreciation (include accumulated impairment losses)	(17,820)	(1,423)	(19,243)	(17,577)	(2,535)	(20,112)

(2) Rental income and expenses from investment properties for the years ended December 31, 2022 and 2021, are as follows:

*(in millions of Korean won)*

	2022	2021
Rental income	₩ 1,387	₩ 1,121
Operating/repair and maintenance expenses (generated from rental income)	1,259	798
Operating/repair and maintenance expenses (not generated from rental income)	19	1,299

(3) Fair value of investment properties as at December 31, 2022 and 2021, are as follows:

*(in millions of Korean won)*

	December 31, 2022	December 31, 2021
Land	₩ 10,573	₩ 8,994

The Group appraised the fair value of its investment property through a qualified and independent appraisal firm on October 1, 2022. The appraisal firm has appropriate qualifications and experience in

# Hyundai Doosan Infracore Co., Ltd. and Subsidiaries

## Notes to the Consolidated Financial Statements

### December 31, 2022 and 2021

relation to the assessment of real estate, and the assessment was conducted using a comparative method, which is a method of obtaining economic value based on the marketability of the property.

#### 14. Property, Plant and Equipment

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

(in millions of Korean won)	2022										
	Land	Buildings	Structures	Machinery	Vehicles	Tools	Equipment	Construction in progress	Total		
Opening net book amount	₩ 651,630	₩ 210,375	₩ 37,207	₩ 146,868	₩ 3,046	₩ 84,738	₩ 12,212	₩ 16,459	₩ 1,162,535		
Acquisitions /											
Capital expenditure	-	2,774	2,863	17,425	522	24,206	4,850	39,210	91,850		
Transfers	-	1,639	1,378	9,312	517	-	447	(34,896)	(21,603)		
Disposals	(20)	(988)	(70)	(2,242)	(59)	(239)	(43)	(844)	(4,505)		
Depreciation	-	(10,442)	(3,490)	(37,323)	(1,055)	(29,397)	(5,122)	-	(86,829)		
Changes in the scope of consolidation	-	-	-	9,353	51	802	19	4,974	15,199		
Others	601	(777)	(146)	210	(16)	(163)	(13)	61	(243)		
Closing net book amount	₩ 652,211	₩ 202,581	₩ 37,742	₩ 143,603	₩ 3,006	₩ 79,947	₩ 12,350	₩ 24,964	₩ 1,156,404		
Acquisition cost	₩ 402,642	₩ 422,303	₩ 94,025	₩ 725,233	₩ 11,397	₩ 368,799	₩ 72,422	₩ 24,964	₩ 2,121,785		
Accumulated depreciation (include accumulated impairment losses)	(1,510)	(216,121)	(56,283)	(581,025)	(8,391)	(288,852)	(59,781)	-	(1,211,963)		
Accumulated gain on revaluation	251,079	-	-	-	-	-	-	-	251,079		
Government grants	-	(3,601)	-	(605)	-	-	(291)	-	(4,497)		

# Hyundai Doosan Infracore Co., Ltd. and Subsidiaries

## Notes to the Consolidated Financial Statements

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(in millions of Korean

2021

won)	2021										Total
	Land	Buildings	Structures	Machinery	Vehicles	Tools	Equipment	Construction in progress			
Opening net book amount	₩ 780,598	₩ 405,908	₩ 37,100	₩ 429,204	₩ 4,127	₩ 76,689	₩ 20,808	₩ 97,078	₩	₩ 1,851,512	
Acquisitions /											
Capital expenditure	-	3,535	2,061	19,240	729	33,560	6,849	58,416		124,390	
Net gain on											
revaluation	4,326	-	-	-	-	-	-	-	-	4,326	
Transfers	-	16,430	1,116	25,776	629	94	5,333	(75,066)		(25,688)	
Disposals	-	(4)	(46)	(2,177)	(292)	(49)	(1,289)	(765)		(4,622)	
Depreciation	-	(14,937)	(3,317)	(70,611)	(1,242)	(26,488)	(6,247)	-		(122,842)	
Spin-off	(133,388)	(209,319)	(411)	(265,616)	(1,219)	-	(14,043)	(65,564)		(689,560)	
Impairment loss	(1,267)	-	-	-	-	-	-	-		(1,267)	
Others	1,361	8,762	704	11,052	314	932	801	2,360		26,286	
Closing net book amount	₩ 651,630	₩ 210,375	₩ 37,207	₩ 146,868	₩ 3,046	₩ 84,738	₩ 12,212	₩ 16,459	₩	₩ 1,162,535	
Acquisition cost	₩ 402,061	₩ 419,129	₩ 90,532	₩ 694,138	₩ 10,806	₩ 347,847	₩ 68,163	₩ 16,459	₩	₩ 2,049,135	
Accumulated depreciation (include accumulated impairment losses)	(1,510)	(205,020)	(53,325)	(547,270)	(7,760)	(263,109)	(55,841)	-		(1,133,835)	
Accumulated gain on revaluation	251,079	-	-	-	-	-	-	-		251,079	
Government grants	-	(3,734)	-	-	-	-	(110)	-		(3,844)	

Land, after initial recognition, is measured using a revaluation model. As at December 31, 2022, the carrying amount of land would be ₩ 402,642 million if measured based on a cost model.

Certain land, buildings and machinery are pledged as collaterals as at December 31, 2022, in connection with the borrowings from Korea Development Bank and others (Note 18).

(2) The Group revalued its land assets as follows:

For the year ended December 31, 2021, the Group initially remeasured all land assets using fair value at the date of the revaluation. As at December 31, 2022, the fair values of land assets are determined from appraisal that is undertaken by independently qualified valuers, Mirae & Saehan Appraisal Co., Ltd. ("Mirae & Saehan") and others on September 23, 2021. Mirae & Saehan and others are members of Korea Association of Property Appraisers and comprise certified professionals that have a significant amount of industry experience.

# Hyundai Doosan Infracore Co., Ltd. and Subsidiaries

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Fair value of a land is determined by reference to Officially Assessed Reference Land Price (“OARLP”), announced by the Ministry of Land, Infrastructure, and Transport, and recent market transactions of similar and recently sold parcels nearby the subject land in order to derive an indication of the most probable sales price (or value) of the land.

(3) Fair value measurements of land asset by fair value hierarchy level as at December 31, 2022, are as follows:

(in millions of Korean won)

Type	Level 1	Level 2	Level 3	Total
Land	₩ -	₩ -	₩ 652,211	₩ 652,211

(4) Valuation methodologies and inputs used for fair value measurements of land assets are as follows:

Valuation methodology	Significant inputs that are not based on observable market	Correlation between unobservable inputs and fair value arguments
Officially Assessed Reference Land Price	Fluctuation rate of land price and others	Fair value increases (decreases) if rate of land price increases (decreases)
OARLP of similar parcels nearby the subject land, reflating corrections necessary for differences between the subject and the comparable	Parcel conditions and others  Land conditions affecting the sales price and others	Fair value increases (decrease) if corrections of parcel conditions and others increase (decrease)  Fair value increases (decreases) if correction of land conditions affecting the sales price increases (decreases)

(5) The effect of applying revaluation model to land for the year ended December 31, 2021, is as follows:

(in millions of Korean won)

Beginning balance	Revaluation	Impairment loss	Spin-off	Others	Ending balance
₩ 780,598	₩ 4,326	₩ (1,267)	₩ (133,388)	₩ 1,361	₩ 651,630

(6) There are no borrowing costs added to the cost of property, plant and equipment for the years ended December 31, 2022 and 2021.

(7) Classification of depreciation expenses for the years ended December 31, 2022 and 2021, is as follows:

(in millions of Korean won)

	2022	2021
Cost of goods sold	₩ 67,508	₩ 69,487

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Selling and administrative expenses		7,779		7,017
Research and development expenses, etc.		11,542		12,729
Profit from continuing operations		-		33,609
Total	₩	86,829	₩	122,842

**15. Right-of-Use Assets**

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

(in millions of Korean won)

	2022				
	Land	Buildings	Vehicles	Equipment	Total
Beginning balance	₩ 12,730	₩ 17,712	₩ 6,299	₩ 111	₩ 36,852
Acquisition	409	29,976	3,787	-	34,172
Termination of lease agreement	-	(439)	(299)	-	(738)
Depreciation	(1,124)	(12,435)	(2,774)	(59)	(16,392)
Changes in the scope of consolidation	-	18,110	-	-	18,110
Others	(294)	475	32	8	221
Ending balance	₩ 11,721	₩ 53,399	₩ 7,045	₩ 60	₩ 72,225
Acquisition cost	₩ 14,489	₩ 75,524	₩ 10,793	₩ 262	₩ 101,068
Accumulated depreciation	(2,768)	(22,125)	(3,748)	(202)	(28,843)

(in millions of Korean won)

	2021						
	Land	Buildings	Machinery	Vehicles	Tools	Equipment	Total
Beginning balance	₩ 15,353	₩ 60,631	₩ 587	₩ 8,985	₩ 16	₩ 2,837	₩ 88,409
Acquisition	536	82,789	472	8,594	-	1,703	94,094
Transfers to							
Investment Properties	-	(15,935)	-	-	-	-	(15,935)
Lease modification	-	(27,439)	-	-	-	-	(27,439)
Termination of lease agreement	-	(1,008)	-	(2,714)	-	(75)	(3,797)
Depreciation	(1,123)	(18,843)	(332)	(3,575)	(4)	(1,305)	(25,182)
Spin-off	(3,477)	(64,040)	(740)	(5,024)	(19)	(3,110)	(76,410)
Others	1,441	1,557	13	33	7	61	3,112
Ending balance	₩ 12,730	₩ 17,712	₩ -	₩ 6,299	₩ -	₩ 111	₩ 36,852

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Acquisition cost	₩	14,821	₩	37,180	₩	-	₩	8,800	₩	-	₩	331	₩	61,132
Accumulated depreciation		(2,091)		(19,468)		-		(2,501)		-		(220)		(24,280)

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

(in millions of Korean won)

	Lease liabilities			
	2022		2021	
Beginning balance	₩	24,792	₩	77,399
Lease modification		-		(35,711)
Payment for lease liabilities		(17,594)		(31,342)
Acquisition of right-of-use assets <sup>1</sup>		34,054		93,671
Termination of lease agreement		(714)		(3,586)
Interest expenses		1,044		3,700
Changes in the scope of consolidation		18,169		-
Spin-off		-		(85,314)
Others		517		5,975
Ending Balance	₩	60,268	₩	24,792

<sup>1</sup> When lease liabilities were newly acquired during the year ended December 31, 2022, the lessee's incremental borrowings rate applied to the measurement was 4.36% to 6.38%.

(3) Classification of depreciation of right-of-use assets for the years ended December 31, 2022 and 2021, is as follows:

(in millions of Korean won)

	2022		2021	
Cost of goods sold	₩	1,771	₩	1,203
Selling and administrative expenses		14,225		12,037
Research and development cost, etc.		396		473
Profit and loss from discontinued operation		-		11,469
Total	₩	16,392	₩	25,182

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(4) Details of the Group's maturity analysis of lease liabilities as at December 31, 2022 and 2021, are as follows:

(in millions of Korean won)

	December 31, 2022									
	Nominal cash flows									
	Total		Less than 1 year		Less than 2 years		Less than 5 years		More than 5 years	
Lease liabilities	₩	70,987	₩	17,365	₩	19,588	₩	21,104	₩	12,930

(in millions of Korean won)

	December 31, 2021									
	Nominal cash flows									
	Total		Less than 1 year		Less than 2 years		Less than 5 years		More than 5 years	
Lease liabilities	₩	26,825	₩	14,420	₩	6,332	₩	5,557	₩	516

(5) Expenditures on short-term leases or leases of low-value assets for the years ended December 31, 2022 and 2021, are as follows:

(in millions of Korean won)

	2022		2021	
Cost of goods sold	₩	633	₩	421
Selling and administrative expenses		2,596		2,317
Research and development cost, etc.		510		63
Profit and loss from discontinued operation		-		1,428
Total	₩	3,739	₩	4,229

(6) The consolidated statements of profit or loss shows the following amounts relating to leases:

(in millions of Korean won)

	2022		2021	
Depreciation of right-of-use assets				
Land	₩	1,124	₩	1,079
Buildings		12,435		10,528
Vehicles		2,774		2,046
Equipment		59		60
Total	₩	16,392	₩	13,713
Interest expense relating to lease liabilities	₩	1,044	₩	2,360
Expense relating to leases of low-value assets		220		141
Expense relating to short-term leases		3,519		2,660
Profit and loss from discontinued operation		-		14,236

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(7) The total cash outflow for lease for the years ended December 31, 2022 and 2021, is as follows:

<i>(in millions of Korean won)</i>	<b>2022</b>		<b>2021</b>	
Lease liabilities	₩	17,594	₩	31,342
Expense relating to short-term leases and leases of low-value assets		3,739		4,229
Total	₩	21,333	₩	35,571

**16. Intangible Assets**

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

<i>(in millions of Korean won)</i>	<b>2022</b>					
	<b>Goodwill</b>	<b>Industrial rights</b>	<b>Development cost</b>	<b>Greenhouse gas emission rights</b>	<b>Other intangible assets</b>	<b>Total</b>
Beginning balance	₩ 2,810	₩ 3,566	₩ 104,928	₩ -	₩ 54,096	₩ 165,400
Additions – internal development	-	-	26,344	-	-	26,344
Acquisitions	-	-	-	-	5,487	5,487
Transfers	-	995	-	-	21,770	22,765
Disposals	-	(283)	-	-	(3,411)	(3,694)
Amortization	-	(765)	(30,126)	-	(16,347)	(47,238)
Impairment loss	-	-	-	-	(891)	(891)
Others	(129)	-	(161)	-	(134)	(424)
Ending balance	₩ 2,681	₩ 3,513	₩ 100,985	₩ -	₩ 60,570	₩ 167,749
Acquisition cost	₩ 37,086	₩ 14,860	₩ 653,779	₩ -	₩ 398,073	₩ 1,103,798
Accumulated amortization (include accumulated impairment loss)	(34,405)	(11,347)	(552,794)	-	(337,503)	(936,049)

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(in millions of Korean won)

	2021					
	Goodwill	Industrial rights	Development cost	Greenhouse gas emission rights	Other intangible assets	Total
Beginning balance	₩ 2,960,633	₩ 1,121,903	₩ 285,341	₩ 3,000	₩ 109,797	₩ 4,480,674
Additions – internal development	-	-	27,704	-	-	27,704
Acquisitions	-	-	-	-	10,732	10,732
Transfers	-	769	314	-	10,306	11,389
Disposals	-	(12)	-	(3,000)	-	(3,012)
Amortization	-	(742)	(49,489)	-	(19,585)	(69,816)
Impairment loss	-	-	(16,578)	-	-	(16,578)
Reversal of impairment loss	-	-	-	-	1,454	1,454
Spin-off	(3,034,296)	(1,147,484)	(146,721)	-	(60,572)	(4,389,073)
Others	76,473	29,132	4,357	-	1,964	111,926
Ending balance	₩ 2,810	₩ 3,566	₩ 104,928	₩ -	₩ 54,096	₩ 165,400
Acquisition cost	₩ 38,872	₩ 13,592	₩ 627,995	₩ -	₩ 377,766	₩ 1,058,225
Accumulated amortization (include accumulated impairment loss)	(36,062)	(10,026)	(523,067)	-	(323,670)	(892,825)

The aggregated carrying amount of goodwill and others with indefinite useful lives in other intangible assets item is ₩ 9,317 million and ₩ 12,520 million as at December 31, 2022 and 2021, respectively.

(2) Carrying amount and remaining amortization period of each significant development project as at December 31, 2022, is as follows:

(in millions of Korean won)	Name of development asset	Carrying amount	Remaining amortization period <sup>1</sup>
Development costs in development	Development project for Engine (Construction machinery), etc.	₩ 25,842	-
Amortized development costs	Development project for Stage 5 Construction machinery, etc.	41,015	11~60 months
	Development project for Stage 5 Engine, etc.	30,786	20~51 months

<sup>1</sup> Remaining amortization period is presented only when amortization was begun. Otherwise, remaining amortization period is presented as “-”.

(3) Impairment losses on intangible assets for the year ended December 31, 2022, is as follows:

(in millions of Korean won)

Related account	Separate asset	Acquisition	Impairment loss	Carrying	Recoverable amount
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	cost	2022	Accumulated	amount	valuation method				
Other intangible assets Golf Membership <sup>1</sup>	₩	11,054	₩	891	₩	4,419	₩	6,635	Fair value less costs to sell

<sup>1</sup> Recoverable amount was estimated to reflect the fair value less costs to sell of individual assets.

(4) Classification of impairment losses (reversal) for the years ended December 31, 2022 and 2021, is as follows:

(in millions of Korean won)	2022	2021
Non-operating expenses	₩ 891	₩ 16,578
Non-operating incomes	-	(1,267)
Profit from continuing operations	-	(187)
Total	₩ 891	₩ 15,124

(5) Borrowing costs added to the cost of intangible assets for the years ended December 31, 2022 and 2021, are as follows:

(in millions of Korean won)	2022	2021
Borrowing costs added to the cost of intangible assets	₩ 535	₩ 696
Interest rate	4.13%	4.16%

(6) Classification of amortization expenses for the years ended December 31, 2022 and 2021, is as follows:

(in millions of Korean won)	2022	2021
Cost of goods sold	₩ 29,422	₩ 31,959
Selling and administrative expenses	17,817	16,991
Profit from continuing operations	-	20,866
Total	₩ 47,239	₩ 69,816

(7) The Group recognized total research and development costs of ₩ 150,597 million (2021: ₩ 139,192 million) as expenses in selling and administration expenses.

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(8) Impairment test of goodwill

The table below summarizes goodwill allocation for each operating segment.

(in millions of Korean won)

Classification	Doosan Infracore Norway AS.	
Goodwill	₩	2,681

The Group uses cash flow projections based on financial budgets approved by the directors covering five-year periods for a value-in-use calculation. The financial budgets are determined based on historical result and expectation of market growth. The assumptions for the calculation of value-in-use, as at December 31, 2022, are as follows:

Classification	Doosan Infracore Norway AS.	
Growth rate		1.00%
Discount rate		11.30%

Cash flows beyond that five-year periods have been extrapolated using the fifth-year cash flow. The growth rate does not exceed long-term average growth rate of market, and the discount rates used reflect relevant risks specific to the cash-generating units.

The Group calculated recoverable amount for each cash-generating unit based on value-in-use, and concluded that there was no impairment loss to recognize for the year ended December 31, 2022, since the total carrying amount did not exceed the recoverable amount.

**17. Greenhouse Gas Emission Rights and Obligation**

(1) The quantities of emission permits which are allocated free of charge for the 3rd planning period (2021~2025) are as follows:

(in tCO <sub>2</sub> -eq)	2021	2022	2023	2024	2025	Total
Allocation with nil consideration	-	102,391	101,467	100,517	100,517	404,892

(2) Changes in emission permits quantities and the carrying amounts for the years ended December 31, 2022 and 2021, are as follows:

		2022											
		Total		2021		2022		2023		2024		2025	
(in tCO <sub>2</sub> -eq, in millions of Korean won)		Quantity	Amount										

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### December 31, 2022 and 2021

At January 1	511,481	₩	-	106,677	₩	-	101,677	₩	-	101,677	₩	-	100,725	₩	-	100,725	₩	-
Allocation with nil consideration (Allocation Cancellation)	(1,046)		-	(210)		-	(210)		-	(210)		-	(208)		-	(208)		-
Carrying forward	-		-	(924)		-	924		-	-		-	-		-	-		-
Disposal	(420)		-	(420)		-	-		-	-		-	-		-	-		-
Surrendered to the government	(105,123)		-	(105,123)		-	-		-	-		-	-		-	-		-
At December 31	404,892	₩	-	-	₩	-	102,391	₩	-	101,467	₩	-	100,517	₩	-	100,517	₩	-

(in tCO <sub>2</sub> -eq, in millions of Korean won)	2021													
	Total		2020		2021		2022		2023		2024		2025	
	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
At January 1	671,645	₩ 3,000	165,164	₩ 3,000	101,677	₩ -	101,677	₩ -	101,677	₩ -	100,725	₩ -	100,725	₩ -
Allocation with nil consideration (Allocation Cancellation)	(875)	-	(875)	-	-	-	-	-	-	-	-	-	-	-
Carrying forward	-	-	(5,000)	-	5,000	-	-	-	-	-	-	-	-	-
Disposal	(87,846)	(2,635)	(87,846)	(2,635)	-	-	-	-	-	-	-	-	-	-
Surrendered to the government	(71,443)	(365)	(71,443)	(365)	-	-	-	-	-	-	-	-	-	-
At December 31	511,481	₩ -	-	₩ -	106,677	₩ -	101,677	₩ -	101,677	₩ -	100,725	₩ -	100,725	₩ -

(3) Details of emission obligations for the years ended December 31, 2022 and 2021, are as follows:

(in millions of Korean won)	2022 <sup>1</sup>	2021
At January 1	₩ -	₩ 1,327
Increase	-	-
Decrease	-	(1,327)
At December 31	₩ -	₩ -

<sup>1</sup> As at December 31, 2022, emission obligations are estimated at 102,199 tons (tCO<sub>2</sub>-eq).

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**18. Pledged Assets**

The Group's assets pledged as collaterals for long-term and short-term borrowings as at December 31, 2022, are as follows:

(in thousand of USD, DM and NOK, in millions of Korean won)

Collateralized asset	Carrying amount	Collateralized amount	Classification	Amount of borrowings	Pledgee
Land and buildings <sup>1</sup>	KRW 750,185	KRW 371,112	Long-term borrowings	KR 160,000 W	Korea Development Bank
		USD 95,025			
		DM 84,000			
Buildings, machinery and others	NOK 357,341	NOK 437,479	Long-term and short-term borrowings	NOK 11,726	Innovasjon Norge and 1 other

<sup>1</sup> The Group's rights to property insurance benefits are pledged as collaterals to the Korea Development Bank.

**19. Long-Term and Short-Term Financial Liabilities**

Details of long-term and short-term financial liabilities as at December 31, 2022 and 2021, are as follows:

(in millions of Korean won)

	December 31, 2022		December 31, 2021	
	Current	Non-current	Current	Non-current
Borrowings	₩ 379,782	₩ 638,029	₩ 506,989	₩ 6,575
Bonds	376,912	177,476	741,412	504,724
Financial guarantee liabilities	-	2,456	-	3,799
Total	₩ 756,694	₩ 817,961	₩ 1,248,401	₩ 515,098

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**20. Trade and Other Payables**

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

(in millions of Korean won)

	December 31, 2022		December 31, 2021	
	Current	Non-current	Current	Non-current
Trade payables	₩ 637,110	₩ -	₩ 641,999	₩ -
Other payables	180,792	-	159,426	4
Accrued expenses	140,959	7,982	133,506	9,419
Others	83,370	-	78,369	5,922
Total	₩ 1,042,231	₩ 7,982	₩ 1,013,300	₩ 15,345

**21. Other Current Liabilities**

Other current liabilities as at December 31, 2022 and 2021, are as follows:

(in millions of Korean won)

	2022		2021	
Advances	₩	2,579	₩	5,245
Others		27,249		9,084
Total	₩	29,828	₩	14,329

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**22. Borrowings and Bonds**

(1) Details of carrying amount of long-term and short-term borrowings as at December 31, 2022 and 2021, are as follows:

1) Short-term borrowings

(in millions of Korean won)

Category	Creditor	Annual interest rate (%) as at December 31, 2022	December 31, 2022	December 31, 2021
Domestic consolidated company :				
Borrowings in foreign currencies	Korea Development Bank and others	-	₩ -	₩ 17,783
Usance L/C	Nonghup Bank and others	0.38~3.72	96,673	7,332
Transferred receivables <sup>1</sup>	Woori Bank and others	-	6,871	22,687
	Sub-Total		103,544	47,802
Overseas consolidated company :				
Borrowings in foreign currencies	Woori Bank and others	1.61~5.97	270,654	420,421
	Short-term borrowings total		374,198	468,223
	Current portion of long-term borrowings		5,584	38,766
	Total		₩ 379,782	₩ 506,989

<sup>1</sup> Financial liabilities related to transferred trade receivables that do not meet the Group's derecognition criteria amounted to ₩ 6,871 million and ₩ 22,687 million as at December 31, 2022 and 2021, respectively. Trade receivables are pledged as collaterals for these liabilities.

2) Long-term borrowings

(in millions of Korean won)

Category	Creditor	Annual interest rate (%) as at December 31, 2022	December 31, 2022	December 31, 2021
Domestic consolidated company :				
Borrowings in Korean Won	Korea Development Bank	-	₩ -	₩ 20,000
	Korea Development Bank	4.70	20,000	-
	Korea Development Bank	6.13	50,000	-
	Korea Development Bank	CD + 1.61	90,000	-
	KB Kookmin Bank	3.50	5,000	10,000
	Export-Import Bank of Korea	3.80	190,000	-
	Bank of China	Financial bonds 6M + 1.40	30,000	-
	Agricultural Bank of China	CD + 1.60	30,000	-

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(in millions of Korean won)

Category	Creditor	Annual interest rate (%) as at December 31, 2022	December 31, 2022	December 31, 2021
Domestic consolidated company :				
	China Construction Bank	CD + 1.60	30,000	-
Borrowings in foreign currencies	KEB Hana Bank	1.70	87,828	-
	Subtotal		<u>532,828</u>	<u>30,000</u>
Overseas consolidated company :				
Borrowings in foreign currencies	Innovasjon Norge, etc.	4.20 ~ 5.50	1,502	2,303
	China Construction Bank	4.00	25,402	-
	KEB Hana Bank	4.30	13,460	-
	Korea Development Bank	4.00 ~ 4.20	43,546	-
	China Minsheng Bank	3.84	27,216	-
	Industrial and Commercial Bank of China	-	-	13,038
	Subtotal		<u>111,126</u>	<u>15,341</u>
	Long-term borrowings total		<u>643,954</u>	<u>45,341</u>
	Less: present value of discount		(341)	-
	Less: current portion		(5,584)	(38,766)
	Total		<u>₩ 638,029</u>	<u>₩ 6,575</u>

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(2) Details of carrying amount of bonds as at December 31, 2022 and 2021, are as follows:

(in millions of Korean won)

Category	Date of issue	Maturity date	Annual interest rate (%) as at December 31, 2022	December 31, 2022	December 31, 2021	Whether the bonds are guaranteed <sup>1</sup>
31 <sup>st</sup>	2017-08-01	2022-08-01	-	₩	- ₩	99,999 Non-guarantee bonds
52 <sup>nd</sup>	2020-02-13	2022-02-14	-	-	-	5,000 Non-guarantee bonds
63 <sup>rd</sup>	2020-02-27	2022-02-25	-	-	-	10,000 Non-guarantee bonds
64 <sup>th</sup>	2020-06-08	2022-06-08	-	-	-	21,600 Non-guarantee bonds
65 <sup>th</sup>	2020-06-08	2023-06-08	2.87	745	745	Non-guarantee bonds
66 <sup>th</sup>	2020-07-10	2022-07-11	-	-	-	10,000 Non-guarantee bonds
68 <sup>th</sup>	2020-08-03	2022-08-03	-	-	-	283,500 Non-guarantee bonds
69 <sup>th</sup>	2020-08-03	2023-08-03	2.81	9,781	9,781	Non-guarantee bonds
70 <sup>th</sup>	2020-08-10	2022-08-10	-	-	-	10,000 Non-guarantee bonds
71 <sup>st</sup>	2020-10-27	2022-10-27	-	-	-	130,000 Non-guarantee bonds
72 <sup>nd</sup>	2020-12-11	2022-12-09	-	-	-	150,000 Non-guarantee bonds
73 <sup>rd</sup>	2021-02-03	2023-02-03	4.30	150,000	150,000	Non-guarantee bonds
74 <sup>th</sup>	2021-02-26	2023-02-24	4.10	20,000	20,000	Non-guarantee bonds
75 <sup>th</sup>	2021-03-12	2023-03-10	3.70	176,000	176,000	Non-guarantee bonds
76 <sup>th</sup>	2021-04-23	2023-04-21	3.60	20,000	20,000	Non-guarantee bonds
78 <sup>th</sup>	2021-05-04	2024-05-03	3.30	60,000	60,000	Non-guarantee bonds
79 <sup>th</sup>	2021-07-29	2024-07-29	3.50	80,000	80,000	Non-guarantee bonds
FRN	2022-04-06	2025-04-03	3M compounded SOFR + 0.95 <sup>2</sup>	38,019	-	Guarantee bonds
		Subtotal		₩ 554,545	₩ 1,236,625	
		Less: present value of discount on bonds		(644)	(2,198)	
		Less: present value of discount on convertible bonds		(14)	(37)	
		Less: present value of discount on bonds with warrant		-	(227)	
		Add: Redemption Premium on convertible bonds		722	722	
		Add: Redemption Premium on bonds with warrant		-	15,421	
		Conversion right adjustment		(221)	(585)	
		Adjustment on bonds with warrants		-	(3,585)	
		Subtotal		₩ (157)	₩ 9,511	
		Subtotal after deduction		₩ 554,388	₩ 1,246,146	
		Less: current portion (including present value of discount)		(376,912)	(741,412)	
		Total		₩ 177,476	₩ 504,724	

<sup>1</sup> The Group has been provided with guarantees by the financial institutions that issued the guaranteed bonds.

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<sup>2</sup> The Group has entered into a contract to pay fixed interest rate (3.63%) in Korean Won on future interest and principal payment date to avoid the risk of cash flow fluctuations due to exchange rate fluctuations (Note 25).

(3) Detailed terms of bonds with warrants and convertible bonds as at December 31, 2022 are as follows:

1) Bonds with warrants issued by the Group are fully repaid as at December 31, 2022 and the details of changes of bonds with warrants during the year ended December 31, 2022, are as follows:

(in millions of Korean won)

Type	Beginning balance	Issuance / Repayments	Exercise/ Amortization	Ending balance
Bonds with warrant	₩ 99,999	₩ (99,804)	₩ (195)	₩ -
Redemption Premium on bonds with warrant	15,421	(15,414)	(7)	-
Present value of discount	(227)	-	227	-
Stock warrants adjustment	(3,585)	-	3,585	-
Carrying amount	₩ 111,608	₩ (115,218)	₩ 3,610	₩ -
Compensation for stock warrants (other capital surplus)	₩ 3,335	₩ -	₩ (3,335)	₩ -

Due to the exertion of stock warrant, as at December 31, 2022, 75.62% of the outstanding balance of 31st warrant were exercised and 1.27% of the principal amount of the bonds was paid. The cumulative number of shares issued as a result of the exercise of stock warrants for 31st warrants is 18,241,163.

2) Details of changes and issuance conditions of convertible bonds issued by the Group as at December 31, 2022, are as follows:

Type	Date of issue	Maturity date	Coupon rate(%)	YTM(%)	Exercisable period	Initial Exercise price	Exercise price after adjustments	Issuing price
The 65th Private Convertible Bonds	2020-06-08	2023-06-08	2.87%	4.82%	From one month after date of issue to one month before maturity	₩ 6,291 per share	₩ 5,536 per share	₩ 745 million

<sup>1</sup> For the above convertible bonds, the total principal amount and the number of convertible shares changed on July 1, 2021, according to the spin-off and merger between the Group and DOOSAN ENERBILITY CO., LTD. (formerly, DOOSAN HEAVY INDUSTRIES & CONSTRUCTION CO.,LTD.).

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#### ① Early redemption clause

The early redemption right is exercisable as a whole or in part against the par value of convertible bond at the interest payment date in 2 years after the date of issuance of bonds, which is on June 8, 2022.

#### ② Maturity redemption

106.2537% of the remaining principal amount will be paid on June 8, 2023, a maturity date.

#### ③ Calculation of exercise price

The exercise price will be adjusted when there is an increase in paid-in capital, issuance of shares without consideration through issuance of shares at a price lower than the market price, stock dividends, or capitalization of reserves, before exercising the stock warrants or convertible bonds. The exercise price of stock warrants was adjusted to ₩5,536 from December 16, 2021.

Type	Date of issue	Maturity date	Coupon rate(%)	YTM(%)	Exercisable period	Initial Exercise price	Exercise price after adjustments	Issuing price <sup>1</sup>
The 69th Private Convertible Bonds	2020-08-03	2023-08-03	2.81%	4.96%	From one month after date of issue to one month before maturity	₩ 7,421 per share	₩ 5,735 per share	₩ 9,781 million

<sup>1</sup> For the above convertible bonds, the total principal amount and the number of convertible shares changed on July 1, 2021, according to the spin-off and merger between the Group and DOOSAN ENERBILITY CO., LTD. (formerly, DOOSAN HEAVY INDUSTRIES & CONSTRUCTION CO.,LTD.)

#### ① Early redemption clause

The early redemption right is exercisable as a whole or in part against the par value of convertible bond at the interest payment date in 2 years after the date of issuance of bonds, which is on August 3, 2022.

#### ② Maturity redemption

106.9085% of the remaining principal amount will be paid on August 3, 2023, a maturity date.

#### ③ Calculation of exercise price

The exercise price will be adjusted when there is an increase in paid-in capital, issuance of shares without consideration through issuance of shares at a price lower than the market price, stock dividends, or capitalization of reserves, before exercising the stock warrants or convertible bonds. The exercise price of stock warrants was adjusted to ₩ 6,530 from December 16, 2021 and ₩ 5,735 from August 3, 2022.

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3) Details of convertible bonds as at December 31, 2022, are as follows:

(in millions of Korean won)

	Beginning balance		Exercise/ Amortization		Ending balance	
Convertible bonds	₩	10,526	₩	-	₩	10,526
Redemption premium on convertible bonds		722		-		722
Present value of discount		(37)		23		(14)
Conversion right adjustment		(585)		364		(221)
Carrying amount	₩	<u>10,626</u>	₩	<u>387</u>	₩	<u>11,013</u>
Compensation for conversion right (other capital surplus)	₩	260	₩	-	₩	260

(4) Repayment schedule of the Group's borrowings and debentures as at December 31, 2022 and 2021, are summarized as follows:

(in millions of Korean won)

	December 31, 2022					
	Borrowings		Bonds		Total	
Within one year	₩	379,782	₩	376,526	₩	756,308
Between 1 and 5 years		<u>638,370</u>		<u>178,019</u>		<u>816,389</u>
Total	₩	<u>1,018,152</u>	₩	<u>554,545</u>	₩	<u>1,572,697</u>

(in millions of Korean won)

	December 31, 2021					
	Borrowings		Bonds		Total	
Within one year	₩	506,989	₩	730,625	₩	1,237,614
Between 1 and 5 years		6,519		506,000		512,519
Later than 5 years		<u>56</u>		<u>-</u>		<u>56</u>
Total	₩	<u>513,564</u>	₩	<u>1,236,625</u>	₩	<u>1,750,189</u>

**Hyundai Doosan Infracore Co., Ltd. and Subsidiaries**  
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(5) Changes in liabilities arising from financial activities for the years ended December 31, 2022 and 2021, are as follows:

(in millions of Korean won)

		<b>December 31, 2022</b>		
		<b>Liabilities</b>		
		<b>Borrowings</b>	<b>Bonds</b>	<b>Total</b>
Beginning balance		₩ 513,564	₩ 1,246,136	₩ 1,759,700
Cash flows from	Borrowing	1,583,097	36,088	1,619,185
financial activities	Repayments	(1,082,143)	(735,292)	(1,817,435)
	Effects of exchange rate changes	6,830	729	7,559
Non-cash flows	Amortization of bond discount	109	6,043	6,152
	Others	(3,646)	684	(2,962)
Ending balance		₩ 1,017,811	₩ 554,388	₩ 1,572,199

(in millions of Korean won)

		<b>December 31, 2021</b>		
		<b>Liabilities</b>		
		<b>Borrowings</b>	<b>Bonds</b>	<b>Total</b>
Beginning balance		₩ 1,880,747	₩ 2,408,393	₩ 4,289,140
Cash flows from	Borrowing	749,050	762,645	1,511,695
financial activities	Repayments	(610,760)	(687,000)	(1,297,760)
	Effects of exchange rate changes	7,849	-	7,849
Non-cash flows	Amortization of present value of discount	1,875	-	1,875
	Amortization of bond discount	-	11,834	11,834
	Spin-off	(1,536,981)	(1,028,227)	(2,565,208)
	Others	21,784	(221,509)	(199,725)
Ending balance		₩ 513,564	₩ 1,246,136	₩ 1,759,700

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**23. Employee Benefits**

(1) Details of net defined benefit assets (liabilities) recognized in the consolidated statements of financial position as at December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	<b>December 31, 2022</b>		<b>December 31, 2021</b>	
Present value of defined benefit obligations	₩	(109,192)	₩	(233,156)
Fair value of plan assets <sup>1</sup>		158,302		219,874
Net defined benefit assets (liabilities)	₩	49,110	₩	(13,282)

<sup>1</sup> The contributions to the National Pension Fund of ₩ 103 million are included in the fair value of plan assets as at December 31, 2022 (2021: ₩ 122 million).

(2) Plan assets as at December 31, 2022 and 2021 consist of:

<i>(in millions of Korean won)</i>	<b>2022</b>		<b>2021</b>	
Time deposits	₩	155,285	₩	215,108
Others		3,017		4,766
Total	₩	158,302	₩	219,874

(3) Profit and loss recognized for the years ended December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	<b>2022</b>		<b>2021</b>	
Current service cost	₩	23,244	₩	34,215
Past service cost		(7,498)		(3,394)
Interest expense		5,593		15,659
Interest income		(5,490)		(9,114)
Contributions recognized as expense		990		23
Total	₩	16,839	₩	37,389

(4) Changes in the defined benefit obligations for the years ended December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	<b>2022</b>		<b>2021</b>	
Beginning balance	₩	233,156	₩	1,056,969
Current service cost		23,244		34,215
Past service cost		(7,498)		(3,394)
Transfer in		153		1,990
Interest expense		5,593		15,659
Remeasurements:				

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Actuarial loss from change in demographic assumptions	1,218	-
Actuarial gain from change in financial assumptions	(41,944)	(14,064)
Actuarial loss (gain) from others	7,400	(14,399)
Spin-off	-	(786,707)
Payments from plans	(112,137)	(87,966)
Exchange differences	31	30,853
Others	(24)	-
Ending balance	<u>₩ 109,192</u>	<u>₩ 233,156</u>

(5) Changes in the fair value of plan assets for the years ended December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	<b>2022</b>		<b>2021</b>	
Beginning balance	₩	219,874	₩	617,988
Expected return on plan assets		5,490		9,114
Remeasurements:		(3,715)		(15,070)
Contributions from employers		21,000		38,003
Spin-off		-		(375,330)
Payments from plans:		(84,360)		(70,968)
Change in the contributions to the national pension fund		(19)		(17)
Exchange differences		32		16,154
Ending balance	<u>₩</u>	<u>158,302</u>	<u>₩</u>	<u>219,874</u>

Actual gain or loss on plan assets is recognized as ₩ 1,775 million (gain) and ₩ 5,956 million (loss) for the years ended December 31, 2022 and 2021, respectively. The Group plans to contribute ₩ 11,112 million to the defined benefit plans in 2023.

(6) The significant actuarial assumptions as at December 31, 2022 and 2021, are as follows:

<i>(in percentage, %)</i>	<b>2022</b>	<b>2021</b>
Discount rate	4.20~5.36	1.30~2.79
Salary increase rate	2.50~3.63	0.00~3.60

(7) Weighted average duration of defined benefit obligation as at December 31, 2022 and 2021, are as follows:

<i>(in year)</i>	<b>December 31, 2022</b>	<b>December 31, 2021</b>
Weighted average duration	11.01	10.05

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

(in millions of Korean won)

	2022		2021	
	Amount	Rate	Amount	Rate
Discount rate:				
1% increase	₩ (11,052)	(10.12%)	₩ (21,545)	(9.24%)
1% decrease	12,984	11.89%	25,324	10.86%
Salary increase rate:				
1% increase	12,589	11.53%	23,921	10.26%
1% decrease	(10,912)	(9.99%)	(20,853)	(8.94%)

**24. Provisions**

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

(in millions of Korean won)

	December 31, 2022		
	Provisions for warranty	Others	Total
Beginning balance	₩ 152,916	₩ 1,127	₩ 154,043
Additional provisions	74,610	(34)	74,576
Offset	(84,126)	(6)	(84,132)
Effect of exchange rate changes	(571)	8	(563)
Ending balance	₩ 142,829	₩ 1,095	₩ 143,924
Current	82,393	1,095	83,488
Non-current	60,436	-	60,436

(in millions of Korean won)

	December 31, 2021		
	Product warranties	Others	Total
Beginning balance	₩ 278,315	₩ 24,911	₩ 303,226
Additional provisions	108,274	3,434	111,708
Offset	(107,484)	(2,679)	(110,163)
Spin-off	(163,763)	(26,680)	(190,443)
Effect of exchange rate changes	37,574	2,141	39,715
Ending balance	₩ 152,916	₩ 1,127	₩ 154,043
Current	115,182	1,127	116,309
Non-current	37,734	-	37,734

The Group recognizes provision by estimating expected expenses in relation to product warranty, defect repair services and others on the basis of the warranty period and historical experience and etc.

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**25. Derivative Instruments**

The Group has entered into derivative contracts with financial institutions to hedge foreign exchange fluctuation risk expected with future receipts of receivables. The fair value of derivatives is assessed based on information of forward exchange rate and interest rate from banks. Details of the valuation as at December 31, 2022, are as follows:

(1) Details of derivative instruments and hedge accounting are as follows:

Purpose	Type of derivative instruments	Description
Cash flow hedge	Foreign currency forward	A contract to avoid cash flow risk arising from forecasted sales in foreign currencies and forecasted expenses in foreign currencies related to the introduction of foreign materials.
	Foreign currency swap	A contract to avoid cash flow risk arising from changes in interest rate and currency exchange rate for foreign currency bonds

(2) Details of valuation of derivative instruments as at December 31, 2022, are as follows:

Purpose	Cash flow hedge	Type of derivative instruments		Notional amount	Weighted average forward rate (in Korean won)	Average maturity	Number of contracts
		Sell	Buy				
	Foreign currency forward	EUR	KRW	109,600	₩ 1,388.85	2023-04-07	22
	Foreign currency forward	KRW	JPY	34,294	0.1026	2023-03-27	18
Cash flow hedge	Foreign currency forward	USD	KRW	445,000	1,333.07	2023-05-04	80
		KRW	USD				
	Foreign currency swap	3.63%	3M Compounded SOFR + 0.95%	37,107	1,236.90	2025-04-03	1

(\*) Settlement method : gross settlement

(\*) The currency unit of the notional amount is based on the selling currency.

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(3) The carrying amount of derivatives as at December 31, 2022, are as follows:

(in millions of Korean won)

		Assets		Liabilities	
		Current	Non-current	Current	Non-current
Cash flow hedge	Foreign currency forward	₩ 36,823	₩ -	₩ 500	₩ -
	Foreign currency swap	-	1,321	-	-
	Total	₩ 36,823	₩ 1,321	₩ 500	₩ -

(4) Gains or loss related to derivative instruments for the year ended at December 31, 2022, are as follows:

(in millions of Korean won)

		2022			
		Revenue	Cost of goods sold	Finance expenses (income)	Other comprehensive income before income tax
Cash flow hedge	Foreign currency forward	₩ (67,888)	₩ 2,051	₩ -	₩ 36,791
	Foreign currency swap	-	-	1,008	313
	Total	₩ (67,888)	₩ 2,051	₩ 1,008	₩ 37,104

For the years ended December 31, 2022, the Group has recognized gain on valuation of derivatives with cash flow hedge accounting amounting to ₩ 37,104 million after deducting deferred tax amounting to ₩ 8,613 million as other comprehensive income.

In relation to cash flow hedges, the expected maximum period of exposure to cash flow risk from the hedged item transactions is less than 28 months from the end of the reporting period.

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**26. Share Capital and Capital Surplus**

Changes in share capital and Capital Surplus for the year ended December 31, 2022, are as follows:

Description	Number of common stocks issued	Share capital	Capital Surplus	Consideration for Stock Warrants	Consideration for convertible rights	Other capital surplus
Beginning balance	197,434,567	₩ 197,435	₩ 660,337	₩ 3,335	₩ 260	₩ (34,924)
Exercise of stock warrants	328,844	328	1,722	858	-	-
Expiration of exercise of stock warrants	-	-	-	(4,193)	-	3,127
Conversion of capital surplus to retained earnings <sup>1</sup>	-	-	(300,000)	-	-	-
Cancellation of share options	-	-	-	-	-	213
Ending balance	<u>197,763,411</u>	<u>₩ 197,763</u>	<u>₩ 362,059</u>	<u>₩ -</u>	<u>₩ 260</u>	<u>₩ (31,584)</u>

<sup>1</sup> In accordance with the resolution of the shareholders' annual general meeting on March 21, 2022, capital surplus was reduced and converted to retained earnings.

Meanwhile, the Parent Company's total number of authorized shares is 400,000,000 shares and the total number of ordinary shares issued is 197,763,411 shares (2021: 197,434,567 shares) with a par value of ₩ 1,000 per share. As at December 31, 2022, the number of non-voting shares under the Commercial Law is 64,835 shares (2021: 64,835 shares).

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**27. Capital Adjustments**

(1) Capital Adjustments as at December 31, 2022 and 2021, consist of:

<i>(in millions of Korean won)</i>	<b>December 31, 2022</b>		<b>December 31, 2021</b>	
Treasury share	₩	(1,096)	₩	(1,096)
Loss on disposal of treasury share		(7,908)		(7,908)
Share options		51		264
Other capital adjustments		(1,571,574)		(1,571,574)
Total	₩	<u>(1,580,527)</u>	₩	<u>(1,580,314)</u>

(2) Share-based Payments

The Group granted share options number of times to its directors. Methods to grant share options, issuance of new shares, issuance of treasury shares or cash settlement, are decided by the Board of Directors at their meeting to be held on stock exercise date. These share options carry a two-year service vesting condition, subsequent to the resolution made at the shareholders' meeting. The number of granted options as at December 31, 2022, is as follows:

*(in Korean won except for share data)*

Date of grant	Description	Number of granted options	Exercisable period	Exercise price	Expected fair value at the date of grant
2013.03.29	9th grant	3,133	2016.03.29~2023.03.28	15,700	8,477
2014.03.21	10th grant	3,849	2017.03.21~2024.03.20	13,600	6,436
	Total	<u>6,982</u>			

Changes in share option for the year ended December 31, 2022, are as follows:

	Number of common stocks to be issued (in shares)			Valuation amount (in millions of Korean won)		
	Beginning balance	Forfeited	Ending balance	Beginning balance	Decrease	Ending balance
8th grant	9,777	(9,777)	-	117	(117)	-
9th grant	9,340	(6,207)	3,133	80	(53)	27
10th grant	10,585	(6,736)	3,849	67	(43)	24
Total	<u>29,702</u>	<u>(22,720)</u>	<u>6,982</u>	<u>264</u>	<u>(213)</u>	<u>51</u>

There is no expense recognized due to share option granted in prior year. In addition, there is no compensation cost to be recognized for the year ended December 31, 2022, and for prospective period.

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The Group calculated the compensation costs by applying fair value approach. Assumptions used in determining fair value of share options are as follows:

	Risk-free interest rate <sup>1</sup>	Expected exercisable period	Expected volatility	Expected dividend yield ratio
9th grant	2.57%	6.5 years	54.12%	0.21%
10th grant	3.27%	6.5 years	42.29%	0.00%

<sup>1</sup> Risk-free interest rate is based on 5-year and 10-year treasury bond yield rate.

**28. Accumulated Other Comprehensive Income**

(1) Changes in accumulated other comprehensive income for the years ended December 31, 2022 and 2021, are as follows:

(in millions of Korean won)

	2022			
	Exchange differences	Cash flow hedges	Revaluation reserves of property, plant and equipment	Total
Beginning balance	₩ 78,750	₩ (355)	₩ 167,029	₩ 245,424
Increase	-	28,491	2,030	30,521
Decrease	(19,594)	-	-	(19,594)
Ending balance	₩ 59,156	₩ 28,136	₩ 169,059	₩ 256,351

(in millions of Korean won)

	2021				
	Share of other comprehensive income of associates	Exchange differences	Cash flow hedges	Revaluation reserves of property, plant and equipment	Total
Beginning balance	₩ 2,042	₩ (406,641)	₩ 2,994	₩ 196,130	₩ (205,475)
Increase	-	485,391	-	-	485,391
Decrease	(2,042)	-	(3,349)	(29,101)	(34,492)
Ending balance	₩ -	₩ 78,750	₩ (355)	₩ 167,029	₩ 245,424

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(2) Income tax effects directly recognized in accumulated other comprehensive income (loss) as at December 31, 2022 and 2021, are as follows:

(in millions of Korean won)

	<b>December 31, 2022</b>			
	<b>Before tax</b>	<b>Deferred tax assets (liabilities)</b>		<b>After tax</b>
Exchange differences	₩ 59,156	₩	-	₩ 59,156
Unrealized gain on valuation of derivatives	36,636		(8,500)	28,136
Gain on revaluation of property, plant and equipment	251,079		(82,020)	169,059
Total	₩ 346,871	₩	(90,520) ₩	256,351

(in millions of Korean won)

	<b>December 31, 2021</b>			
	<b>Before tax</b>	<b>Deferred tax assets (liabilities)</b>		<b>After tax</b>
Exchange differences	₩ 78,750	₩	-	₩ 78,750
Unrealized loss on valuation of derivatives	(468)		113	(355)
Gain on revaluation of property, plant and equipment	251,079		(84,050)	167,029
Total	₩ 329,361	₩	(83,937) ₩	245,424

## 29. Retained Earnings

(1) Retained earnings as at December 31, 2022 and 2021, consist of:

(in millions of Korean won)

	<b>December 31, 2022</b>		<b>December 31, 2021</b>	
Retained earnings before appropriation	₩	2,431,315	₩	1,879,094

(2) The appropriation of retained earnings for the years ended December 31, 2022 and 2021, is as follows:

(in millions of Korean won)

	<b>2022</b>		<b>2021</b>	
1. Unappropriated retained earnings carried over from prior year	₩	1,879,094	₩	1,408,126
2. Profit for the year		229,771		461,535
3. Remeasurements of net defined benefit liabilities		22,450		7,889
4. Conversion of capital surplus to retained earnings <sup>1</sup>		300,000		-
5. Valuation of equity instruments at fair value		-		1,544
6. Unappropriated retained earnings to be carried forward	₩	2,431,315	₩	1,879,094

<sup>1</sup> In accordance with the resolution of the shareholders' annual general meeting on March 21, 2022, capital surplus was reduced and converted to retained earnings(Note 26).

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**30. Revenue**

Revenue as at December 31, 2022 and 2021, consist of:

<i>(in millions of Korean won)</i>	<b>2022</b>		<b>2021</b>	
1. Revenue from contracts with customers				
Type of revenue:				
- Revenue of manufactured products / merchandise	₩	4,691,774	₩	4,467,727
- Other revenue		110,241		104,416
Subtotal	₩	4,802,015	₩	4,572,143
Timing of revenue recognition:				
- At a point in time	₩	4,525,788	₩	4,379,926
- Over time		276,227		192,217
Subtotal	₩	4,802,015	₩	4,572,143
2. Revenue from other sources				
- Rental income	₩	21,987	₩	22,300
- profit or loss from hedge		(67,888)		(778)
Subtotal	₩	(45,901)	₩	21,522
Total	₩	4,756,114	₩	4,593,665

**(2) Liabilities related to Contracts with Customers**

The Group has recognized the following liabilities related to contracts with customers as at December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	<b>December 31, 2022</b>		<b>December 31, 2021</b>	
Refund liabilities	₩	7,682	₩	5,787
Extended warranty/Incentive and others		138,625		151,496
Shipping-insurance service		11,571		8,826
Total	₩	157,878	₩	166,109

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**31. Selling and Administrative Expenses**

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

<i>(in millions of Korean won)</i>	<b>2022</b>		<b>2021</b>	
Salaries	₩	120,015	₩	115,876
Post-employment benefits		6,693		7,192
Employee benefits		37,322		32,127
Printing		2,852		2,091
Freight and custody		3,203		2,727
Communications		3,330		3,652
Utilities		3,615		2,938
Maintenance		5,040		3,821
Insurance		7,160		6,288
Depreciation		9,057		8,137
Amortization		17,817		16,991
Research and development		150,597		139,192
Advertising		14,233		38,812
Sales commission		54,152		95,091
Taxes and dues		7,023		7,337
Travel		12,052		7,071
Commission		86,510		74,621
Entertainment		1,549		2,358
Education and training		2,526		4,332
Bad debt expenses		5,547		6,544
Right of use asset depreciation		14,225		12,037
Warranty expenses		81,379		104,481
Others		29,177		33,095
Total	₩	675,074	₩	726,811

# Hyundai Doosan Infracore Co., Ltd. and Subsidiaries

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### 32. Segment Information

The Group's operating segments are as follows:

Business segment	Main products
Engines ("EG")	Engine of the commercial cars and buses, engine parts, and others
Construction Equipment ("CE")	Crawler excavator, excavator parts and others
Construction Equipment ("Bobcat") <sup>1</sup>	Compact (Skid Steer Loader, Compact Track Loader, Mini Excavator), Heavy Excavator, and Portable Power

<sup>1</sup> In accordance with a resolution of the shareholders' meeting held on May 13, 2021, the investment business segment among the Group's assets was spun off and merged with DOOSAN ENERBILITY CO., LTD. on July 1, 2021.

#### (1) Profit or loss by each segment

(in millions of Korean won)

	2022				
	Revenue	Inter-segment revenue	Operating profit	Profit for the year	Depreciation <sup>2</sup>
EG	₩ 1,266,581	₩ (228,560)	₩ 124,698	₩ 97,171	₩ 66,647
CE	5,589,186	(1,871,093)	207,849	132,380	85,089
Consolidation adjustments <sup>1</sup>	(2,099,653)	2,099,653	-	-	-
Total	₩ 4,756,114	₩ -	₩ 332,547	₩ 229,551	₩ 151,736

<sup>1</sup> Consolidation adjustments includes intergroup transactions, unrealized gains and losses and others.

<sup>2</sup> Sum of property, plant and equipment depreciation, investment properties depreciation, amortization, and right-of-use depreciation.

(in millions of Korean won)

	2021				
	Revenue	Inter-segment revenue	Operating profit	Profit (loss) for the year	Depreciation <sup>2</sup>
EG	₩ 1,054,547	₩ (199,797)	₩ 47,466	₩ (6,676)	₩ 71,225
CE	5,207,926	(1,469,011)	217,042	118,260	81,401
Consolidation adjustments <sup>1</sup>	(1,668,808)	1,668,808	-	-	-
Total	₩ 4,593,665	₩ -	₩ 264,508	₩ 111,584	₩ 152,626

<sup>1</sup> Consolidation adjustments includes intergroup transactions, unrealized gains and losses and others.

<sup>2</sup> Sum of property, plant and equipment depreciation, investment properties depreciation, amortization, and right-of-use depreciation.

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(2) Segment assets and segment liabilities

(in millions of Korean won)

	2022				
	EG	CE	Common	Consolidation adjustments <sup>1</sup>	Total
Segment assets	₩ 1,032,501	₩ 3,644,356	₩ 2,038,229	₩ (1,978,418)	₩ 4,736,668
Segment liabilities	789,576	4,102,632	(650,335)	(1,140,246)	3,101,627

<sup>1</sup> Consolidation adjustments includes intergroup transactions, unrealized gains and losses and others.

(in millions of Korean won)

	2021				
	EG	CE	Common	Consolidation adjustments <sup>1</sup>	Total
Segment assets	₩ 878,254	₩ 3,154,756	₩ 2,630,609	₩ (1,881,329)	₩ 4,782,290
Segment liabilities	730,567	3,646,839	30,906	(995,846)	3,412,466

<sup>1</sup> Consolidation adjustments includes intergroup transactions, unrealized gains and losses and others.

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(3) Status of the region where the group is located

(in millions of  
Korean won)

	December 31, 2022						
	Korea	North America	Asia	Europe	Others	Consolidation adjustments	Total
Revenue	₩ 4,228,552	₩ 514,543	₩ 1,155,997	₩ 892,852	₩ 63,823	₩ (2,099,653)	₩ 4,756,114
Inter-segment revenue	(1,447,750)	(654)	(559,749)	(91,500)	-	2,099,653	-
Revenue from external customers	2,780,802	513,889	596,248	801,352	63,823	-	4,756,114

<sup>1</sup> Consolidation adjustments includes intergroup transactions, unrealized gains and losses and others.

(in millions of  
Korean won)

	December 31, 2021						
	Korea	North America	Asia	Europe	Others	Consolidation adjustments	Total
Revenue	₩ 3,620,693	₩ 367,352	₩ 1,483,692	₩ 747,197	₩ 43,539	₩ (1,668,808)	₩ 4,593,665
Inter-segment revenue	(1,227,210)	(881)	(382,321)	(57,988)	(408)	1,668,808	-
Revenue from external customers	2,393,483	366,471	1,101,371	689,209	43,131	-	4,593,665

<sup>1</sup> Consolidation adjustments includes intergroup transactions, unrealized gains and losses and others.

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(4) Status of non-current asset by regional

<i>(in millions of Korean won)</i>	<b>December 31, 2022</b>		<b>December 31, 2021</b>	
Korea	₩	1,238,349	₩	1,233,438
North America		19,885		12,083
Asia		114,977		95,468
Europe		22,875		25,903
Others		10,111		9,043
Total <sup>1</sup>	₩	<u>1,406,197</u>	₩	<u>1,375,935</u>

<sup>1</sup> Sum of property, plant and equipment, investment properties, right-of-use assets.

**33. Expenses by Nature**

Expenses by Nature for the years ended December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	<b>2022</b>		<b>2021</b>	
Purchases of inventories (raw materials and merchandise)	₩	3,230,751	₩	3,073,703
Changes in inventories		(238,752)		(123,961)
Employee benefits expenses		423,163		406,628
Depreciation		88,107		89,963
Depreciation of right-of-use assets		16,392		13,713
Amortization		47,238		48,950
Other expenses		856,668		820,161
Total	₩	<u>4,423,567</u>	₩	<u>4,329,157</u>

**Hyundai Doosan Infracore Co., Ltd. and Subsidiaries**  
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**34. Finance Income and Expenses**

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

*(in millions of Korean won)*

	<b>2022</b>		<b>2021</b>	
Finance income:				
Interest income	₩	9,740	₩	8,222
Gain on dividends		419		160
Gain on foreign currency transactions		85,569		72,896
Gain on foreign currency translations		43,858		37,704
Financial guarantee income		1,579		-
Gain on repayment of payables		27		-
Subtotal	₩	<u>141,192</u>	₩	<u>118,982</u>
Finance expenses:				
Interest expenses	₩	(75,660)	₩	(94,329)
Loss on foreign currency transactions		(58,874)		(35,733)
Loss on foreign currency translations		(51,943)		(28,645)
Financial guarantee expenses		(552)		(559)
Other finance expenses		(9)		(1,270)
Subtotal	₩	<u>(187,038)</u>	₩	<u>(160,536)</u>
Total	₩	<u>(45,846)</u>	₩	<u>(41,554)</u>

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**35. Other non-operating Income and Expenses**

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

<i>(in millions of Korean won)</i>	<b>2022</b>	<b>2021</b>
Other non-operating income:		
Gain on disposal of short-term investment assets	₩ 1	₩ -
Gain on valuation of long-term investment assets	2	2
Gain on disposal of property, plant and equipment	1,130	851
Gain on disposal of other investment assets	6,609	-
Gain on disposal of intangible assets	179	766
Gain on disposal of investment properties	14	20
Reversal of impairment loss on investment properties	-	96
Reversal of impairment loss on intangible assets	-	1,267
Others	7,982	7,738
Subtotal	<u>₩ 15,917</u>	<u>₩ 10,740</u>
Other non-operating expenses:		
Loss on disposal of trade receivables	₩ (17,145)	₩ (7,514)
Loss on valuation of short-term investment assets	-	(2)
Loss on valuation of long-term investment assets	(42)	(90)
Loss on disposal of long-term investment assets	(13)	-
Loss on disposal of other investment assets	(457)	-
Impairment loss on other receivables	(1,484)	(485)
Loss on disposal of property, plant and equipment	(1,681)	(188)
Loss on disposal of intangible assets	(283)	(1,325)
Impairment loss on property, plant and equipment	-	(1,267)
Impairment loss on intangible assets	(891)	(16,578)
Impairment loss on investment properties	-	(1,311)
Donations	(1,108)	(7,333)
Others	(712)	(1,742)
Subtotal	<u>₩ (23,816)</u>	<u>₩ (37,835)</u>
Total	<u>₩ (7,899)</u>	<u>₩ (27,095)</u>

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**36. Income Tax Expense**

(1) Current and deferred tax reflected in income tax expense for the years ended December 31, 2022 and 2021, consists of:

<i>(in millions of Korean won)</i>	<b>2022</b>		<b>2021</b>	
Current tax:	₩	23,601	₩	(12,846)
Deferred tax		39,302		66,513
Total income tax expense	₩	62,903	₩	53,667
Deferred tax charged directly to equity <sup>1</sup>		(13,745)		8,763
Income tax expense	₩	49,158	₩	62,430

<sup>1</sup> Tax effects on taxable profit amounting to ₩ 444,290 million due to spin-off for the year ended December 31, 2021 are included and it was recognized as other components of equity.

(2) The Group offsets deferred tax assets and deferred tax liabilities if the Group has a legally enforceable right to set off current tax assets against current tax liabilities and the deferred tax assets and the deferred tax liabilities relate to income taxes levied by the same taxation authority. Changes in deferred tax assets and liabilities for the years ended December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	<b>2022</b>					
	<b>Beginning</b>		<b>Increases (decreases)</b>		<b>Ending</b>	
Advances from government	₩	1,015	₩	11	₩	1,026
Allowance for doubtful accounts		34,012		(28,630)		5,382
Provision for product warranties		36,385		(16,808)		19,577
Net defined benefit liabilities		3,145		25,496		28,641
Investment in associates		(9,758)		(1,542)		(11,300)
Provision for temporary depreciation		(3,370)		139		(3,231)
Gain on revaluation of land		(105,274)		4,350		(100,924)
Derivative assets (liabilities)		113		(8,612)		(8,499)
Unrealized profit of inventories		10,586		1,354		11,940
Others		93,318		(15,060)		78,258
Total	₩	60,172	₩	(39,302)	₩	20,870

<i>(in millions of Korean won)</i>	<b>2021</b>							
	<b>Beginning</b>		<b>Spin-off</b>	<b>Increases (Decreases)</b>		<b>Ending</b>		
Advances from government	₩	1,138	₩	-	₩	(123)	₩	1,015
Allowance for doubtful accounts		33,160		-		852		34,012

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Provision for product warranties	73,983	(38,475)	877	36,385
Net defined benefit liabilities	105,864	(96,391)	(6,328)	3,145
Investment in associates	(14,765)	-	5,007	(9,758)
Provision for temporary depreciation	(3,715)	-	345	(3,370)
Gain on revaluation of land	(121,823)	-	16,549	(105,274)
Derivative assets (liabilities)	(1,645)	-	1,758	113
Unrealized profit of inventories	11,862	3,710	(4,986)	10,586
Others	(199,506)	373,288	(80,464)	93,318
Total	₩ (115,447)	₩ 242,132	₩ (66,513)	₩ 60,172

(3) Temporary differences which have not been recognized as deferred tax assets as at December 31, 2022 and 2021, are as follows (except for investments in subsidiaries and associates):

<i>(in millions of Korean won)</i>	<b>December 31, 2022</b>		<b>December 31, 2021</b>	
Tax loss carryforwards	₩	-	₩	289,224
Deductible temporary differences		34,671		218,447
Tax credits carryover		6,947		-

The probability of deferred tax assets being realized depends on the Group's ability to generate taxable income in future years, the economic situation and industry forecast. The Group periodically reviews such matters.

(4) Temporary differences from investments in subsidiaries, joint ventures and associates, which are not recognized as deferred tax assets (liabilities) are as follows:

<i>(in millions of Korean won)</i>	<b>December 31, 2022</b>		<b>December 31, 2021</b>	
Subsidiaries and others	₩	209,159	₩	224,217

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(5) The tax on the Group's profit before tax differs from the theoretical amount that would arise using the weighted average tax rate applicable to profits of the consolidated entities as follows:

<i>(in millions of Korean won)</i>	<b>2022</b>		<b>2021</b>	
Profit before income tax expense	₩	278,710	₩	174,014
Tax at domestic tax rates applicable to profits in the respective countries	₩	81,024	₩	20,251
Adjustments:				
Non-temporary difference		326		10,530
Effect of change in recognition of deferred income tax		(13,225)		59,741
Tax credits		(1,101)		(16,343)
Additional income tax and tax refund for prior periods		(949)		(1,039)
Others		(16,917)		(10,710)
Income tax expense	₩	49,158	₩	62,430
Average effective tax rate (Income tax expense / Profit before income tax)		17.64%		- <sup>1</sup>

<sup>1</sup> Effective tax rate is not calculated due to the tax benefit for years ended December 31, 2021

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**37. Earnings per Share**

(1) Basic earnings per share

Basic earnings per share is calculated by dividing the profit attributable to owners of the Group by the weighted average number of ordinary shares outstanding during the financial year excluding treasury shares.

Basic earnings per share attributable to owners of the Group for the years ended December 31, 2022 and 2021, are computed as follows:

(in Korean won, shares)

	2022					
	Discontinued operations		Continuing operations		Total	
Profit attributable to the ordinary equity holders of the Parent Company	₩	-	₩	229,771,426,564	₩	229,771,426,564
Weighted average number of ordinary shares outstanding (*)		-		197,557,904		197,557,904
Basic earnings per share	₩	-	₩	1,163	₩	1,163

(in Korean won, shares)

	2021					
	Discontinued operations		Continuing operations		Total	
Profit attributable to the ordinary equity holders of the Parent Company	₩	355,598,127,558	₩	105,937,204,496	₩	461,535,332,054
Weighted average number of ordinary shares outstanding (*)		79,353,685		79,353,685		79,353,685
Basic earnings per share	₩	4,481	₩	1,335	₩	5,816

(\*) The weighted average number of ordinary shares outstanding is calculated as follows:

(in shares)

	2022	2021
Ordinary shares at the beginning <sup>1</sup>	197,369,732	67,046,052
Exercise of stock warrants	188,172	7,577,171
Capital increase	-	4,730,462
Weighted average number of ordinary shares outstanding	197,557,904	79,353,685

<sup>1</sup> Treasury shares are excluded.

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(2) Diluted earnings per share

Diluted earnings per share for the years ended December 31, 2022 and 2021, are computed as follows.

(in Korean won, shares)

	2022		
	Discontinued operations	Continuing operations	Total
Profit attributable to ordinary shares before adjustment	₩ -	₩ 229,771,426,564	₩ 229,771,426,564
Adjustment:	-	500,532,100	500,532,100
Profit attributable to ordinary shares after adjustment	-	230,271,958,664	230,271,958,664
Weighted average number of ordinary shares outstanding after adjustment <sup>(*)</sup>	-	199,008,051	199,008,051
Diluted earnings per share	₩ -	₩ 1,157	₩ 1,157

(in Korean won, shares)

	2021		
	Discontinued operations	Continuing operations	Total
Profit attributable to ordinary shares before adjustment	₩ 355,598,127,558	₩ 105,937,204,496	₩ 461,535,332,054
Adjustment:	545,700,864	480,659,559	1,026,360,423
Profit attributable to ordinary shares after adjustment	356,143,828,422	106,417,864,055	462,561,692,477
Weighted average number of ordinary shares outstanding after adjustment <sup>(*)</sup>	86,686,202	86,686,202	86,686,202
Diluted earnings per share	₩ 4,108	₩ 1,228	₩ 5,336

<sup>(\*)</sup> The details of weighted-average number of ordinary shares outstanding after adjustment used to calculate diluted earnings per share are as follows:

(in shares)

	2022	2021
Ordinary shares at the beginning	197,557,904	79,353,685
Exercise of stock warrants	13,722	5,896,092
Convertible bonds	1,436,425	1,436,425
Weighted average number of Ordinary shares outstanding	199,008,051	86,686,202

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Share options that could be used to dilute basic earnings per share in the future, which were not considered in the calculation of diluted earnings per share due to an anti-dilutive effect for the years ended December 31, 2022 and 2021, are as follows:

<i>(in shares)</i>	<b>2022</b>	<b>2021</b>
Potential ordinary shares	6,982	29,702

### 38. Dividends

The Group did not pay any dividends for the year ended December 31, 2022. A dividend in respect of the year ended December 31, 2022, of ₩ 240 per share, amounting to a total dividend of ₩ 47,477 million, is to be proposed to shareholders at the annual general meeting on March 27, 2023. These consolidated financial statements do not reflect this dividend payable.

### 39. Consolidated Statements of Cash Flows

(1) Details of adjustments, and changes in operating assets and liabilities in the consolidated statement of cash flows for the years ended December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	<b>2022</b>	<b>2021</b>
Adjustments:		
1. Income tax expense	₩ 49,158	₩ (57,522)
2. Finance income	(73,783)	(58,520)
3. Finance expenses	129,057	178,220
4. Post-employment benefits	15,849	37,366
5. Bad debt expenses	5,547	5,519
6. Other bad debt expenses	1,484	484
7. Depreciation of property, plant and equipment	86,829	122,842
8. Amortization	47,238	69,816
9. Investment properties depreciation	1,278	2,097
10. Right of use asset depreciation	16,392	25,182
11. Gain on disposal of property, plant and equipment	(1,130)	(859)
12. Loss on disposal of property, plant and equipment	1,681	190
13. Gain on disposal of intangible assets	(179)	(766)
14. Loss on disposal of intangible assets	283	1,325
15. Contribution to provision for warranty	74,610	93,756
16. Gain on disposal of investment properties	(14)	(20)
17. Impairment loss on property, plant and equipment	-	1,267
18. Impairment loss on intangible assets	891	16,578
19. Reversal of impairment loss on intangible assets	-	(1,454)
20. Impairment loss on investment properties	-	1,311

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<i>(in millions of Korean won)</i>	<b>2022</b>	<b>2021</b>
21. Reversal of impairment loss on investment properties	-	(96)
22. Gain on valuation of short-term financial assets	-	(8,856)
23. Loss on valuation of short-term financial assets	-	2
24. Gain on valuation of long-term financial assets	(2)	(5,990)
25. Loss on valuation of long-term financial assets	42	101
26. Gain on disposal of short-term financial assets	(1)	-
27. Loss on disposal of long-term financial assets	13	1
28. Loss (gain) on equity method investments	93	(6,503)
29. Dividend income	(419)	(448)
30. Others	10,837	8,277
Total	<u>₩ 365,754</u>	<u>₩ 423,300</u>

<i>(in millions of Korean won)</i>	<b>2022</b>	<b>2021</b>
Changes in operating assets and liabilities:		
1. Changes in trade receivables	₩ 33,144	₩ (157,504)
2. Changes in other receivables	33,937	(36,871)
3. Changes in derivative assets	-	23
4. Changes in inventories	(265,724)	(270,922)
5. Changes in other current assets	(18,858)	(31,000)
6. Changes in other non-current assets	-	2,210
7. Changes in trade payables	21,553	54,867
8. Changes in other payables	23,614	170,915
9. Changes in derivative liabilities	-	(11)
10. Changes in provisions	(84,132)	(76,246)
11. Changes in contract liabilities	(8,231)	(277,785)
12. Changes in other current liabilities	13,966	60,873
13. Payment of defined benefit obligations (defined benefit plan)	(112,137)	(86,900)
14. Transfer of post-employment benefits	153	1,990
15. Changes in plan assets	63,379	31,916
16. Changes in other non-current liabilities	(1,321)	36,847
Total	<u>₩ (300,657)</u>	<u>₩ (577,598)</u>

**Hyundai Doosan Infracore Co., Ltd. and Subsidiaries**  
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(2) The consolidated statements of cash flows are presented using indirect method. Significant non-cash transactions for the years ended December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	<b>2022</b>	<b>2021</b>
Payments of non-trade payables related to acquisition of property, plant and equipment and intangible assets	₩ (2,520)	₩ 5,951
Net assets related to spin-off	-	2,311,848
Tax effects related to spin-off	-	(237,176)
Reclassification of other non-current assets related to acquisition of the shares of Doosan Infracore China Co., Ltd.	-	10,000

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**40. Financial Instruments by Category**

(1) Carrying amount and fair value of financial assets and liabilities by category as at December 31, 2022 and 2021, are as follows:

(in millions of Korean won)

		December 31, 2022												
		Carrying amount												
		Cash flow hedge instruments	Financial assets at fair value through profit or loss	Financial assets at fair value through other comprehensive income	Amortized Cost	Others	Total			Fair value				
<b>Assets recognized at fair value:</b>														
Long-term and short-term financial assets <sup>1</sup>	₩	-	₩	3,328	₩	935	₩	-	₩	-	₩	4,263	₩	4,263
Derivative assets		38,144		-		-		-		-		38,144		38,144
Long-term and short-term trade and other receivables		-		-		25,949		-		-		25,949		25,949
Subtotal		38,144		3,328		26,884		-		-		68,356		68,356
<b>Financial assets not measured at fair value:</b>														
Cash and cash equivalents		-		-		298,375		-		-		298,375		-
Long-term and short-term financial assets		-		-		69,130		-		-		69,130		-
Long-term and short-term trade and other receivables		-		-		1,358,777		-		-		1,358,777		-
Subtotal		-		-		1,726,282		-		-		1,726,282		-
Total	₩	38,144	₩	3,328	₩	26,884	₩	1,726,282	₩	-	₩	1,794,638	₩	68,356
<b>Liabilities recognized at fair value:</b>														
Derivative liabilities		500		-		-		-		-		500		500
Long-term and short-term financial guarantee liabilities		-		-		-		-		2,456		2,456		2,456
Subtotal		500		-		-		-		2,456		2,956		2,956
<b>Financial liabilities not measured at fair value:</b>														
Long-term and short-term borrowings		-		-		-		1,017,811		-		1,017,811		-

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December 31, 2022

	Carrying amount						Fair value
	Cash flow hedge instruments	Financial assets at fair value through profit or loss	Financial assets at fair value through other comprehensive income	Amortized Cost	Others	Total	
Long-term and short-term bonds	-	-	-	554,388	-	554,388	-
Long-term and short-term trade and other payables	-	-	-	1,050,213	-	1,050,213	-
Long-term and short-term lease liabilities	-	-	-	-	60,268	60,268	-
Subtotal	-	-	-	2,622,412	60,268	2,682,680	-
Total	₩ 500	₩ -	₩ -	₩ 2,622,412	₩ 62,724	₩ 2,685,636	₩ 2,956

<sup>1</sup> The amount of financial assets that the Group determined that there would be no significant difference between the carrying amount and the fair value is ₩1,487 million.

(in millions of Korean won)

December 31, 2021

	Carrying amount						Fair value
	Cash flow hedge	Financial assets at fair value through profit or loss	Financial assets at fair value through other comprehensive income	Amortized Cost	Others	Total	
<b>Assets recognized at fair value:</b>							
Long-term and short-term financial assets <sup>1</sup>	₩ -	₩ 2,826	₩ 935	₩ -	₩ -	₩ 3,761	₩ 3,761
Derivative assets	1,886	-	-	-	-	1,886	1,886
Long-term and short-term trade and other receivables	-	-	20,405	-	-	20,405	20,405
Subtotal	1,886	2,826	21,340	-	-	26,052	26,052
<b>Financial assets not measured at fair value:</b>							
Cash and cash equivalents	-	-	-	545,383	-	545,383	-
Long-term and short-term financial assets	-	-	-	95,254	-	95,254	-
Long-term and short-term	-	-	-	1,519,339	-	1,519,339	-

**Hyundai Doosan Infracore Co., Ltd. and Subsidiaries**  
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(in millions of Korean won)

December 31, 2021

	Carrying amount							Fair value
	Cash flow hedge	Financial assets at fair value through profit or loss	Financial assets at fair value through other comprehensive income	Amortized Cost	Others	Total		
trade and other receivables								
Subtotal	-	-	-	2,159,976	-	2,159,976	-	
Total	₩ 1,886	₩ 2,826	₩ 21,340	₩ 2,159,976	₩ -	₩ 2,186,028	₩ 26,052	
<b>Liabilities recognized at fair value:</b>								
Derivative liabilities	2,355	-	-	-	-	2,355	2,355	
Long-term and short-term financial guarantee liabilities	-	-	-	-	3,799	3,799	3,799	
Subtotal	2,355	-	-	-	3,799	6,154	6,154	
<b>Financial liabilities not measured at fair value:</b>								
Long-term and short-term borrowings	-	-	-	513,564	-	513,564	-	
Long-term and short-term bonds	-	-	-	1,246,136	-	1,246,136	-	
Long-term and short-term trade and other payables	-	-	-	1,028,644	-	1,028,644	-	
Long-term and short-term lease liabilities	-	-	-	-	24,792	24,792	-	
Subtotal	-	-	-	2,788,344	24,792	2,813,136	-	
Total	₩ 2,355	₩ -	₩ -	₩ 2,788,344	₩ 28,591	₩ 2,819,290	₩ 6,154	

<sup>1</sup> The amount of financial assets that the Group determined that there would be no significant difference between the carrying amount and the fair value is ₩ 937 million.

The Group does not present fair value for financial assets and liabilities in case the carrying amount is considered as a reasonable approximation of fair value.

# Hyundai Doosan Infracore Co., Ltd. and Subsidiaries

## Notes to the Consolidated Financial Statements

### December 31, 2022 and 2021

#### (2) Fair value measurement

##### 1) Fair value hierarchy

① The Group classified fair value measurements in accordance with the fair value hierarchy which reflects the significance of the inputs used in fair value measurement. The fair value hierarchy is as follows.

Classification	Description
Level 1	Quoted prices (unadjusted) in active markets for identical assets or liabilities that an entity can access at the measurement date
Level 2	All inputs other than quoted prices included in level 1 that are observable (either directly that is, prices, or indirectly that is, derived from prices) for the asset or liability
Level 3	Unobservable inputs for the asset or liability

② Fair value hierarchy classifications of the financial instruments that are measured at fair value as at December 31, 2022 and 2021, are as follows:

(in millions of Korean won)

	2022			
	Level 1	Level 2	Level 3	Total
Financial assets at fair value through other comprehensive income	₩ -	₩ 25,949	₩ 935	₩ 26,884
Financial assets at fair value through profit or loss	-	-	3,328	3,328
Derivative assets	-	38,144	-	38,144
Derivative liabilities	-	500	-	500
Long-term and short-term financial guarantee liabilities	-	2,456	-	2,456

(in millions of Korean won)

	2021			
	Level 1	Level 2	Level 3	Total
Financial assets at fair value through other comprehensive income	₩ -	₩ 20,405	₩ 935	₩ 21,340
Financial assets at fair value through profit or loss	8	-	2,818	2,826
Derivative assets	-	1,886	-	1,886
Derivative liabilities	-	2,355	-	2,355
Long-term and short-term financial guarantee liabilities	-	3,799	-	3,799

# Hyundai Doosan Infracore Co., Ltd. and Subsidiaries

## Notes to the Consolidated Financial Statements

### December 31, 2022 and 2021

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

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

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

Specific valuation techniques used to value financial instruments include:

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

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

**Hyundai Doosan Infracore Co., Ltd. and Subsidiaries**  
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2) Valuation techniques and inputs for Level 2 of the fair value hierarchy

① Among the assets and liabilities measured at fair value as at the end of the reporting period, the valuation techniques and inputs for assets and liabilities classified as Level 2 of the fair value hierarchy are as follows:

<i>(in millions of Korean won)</i>	<b>December 31,</b>		<b>December 31,</b>		<b>Valuation techniques</b>	<b>Inputs</b>
	<b>2022</b>		<b>2021</b>			
Derivative instruments:						
Derivative assets	₩	38,144	₩	1,896	Discounted cash flow models and others	Foreign exchange forward price, discount rate and others
Derivative liabilities		500		2,355	Discounted cash flow models and others	Foreign exchange forward price, discount rate and others

3) Valuation techniques and inputs for Level 3 of the fair value hierarchy

① Changes in assets classified as Level 3 of the fair value hierarchy among the assets and liabilities measured at fair value for the years ended December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	<b>2022</b>		<b>2021</b>	
Financial assets at fair value through profit or loss:				
Beginning balance	₩	2,818	₩	18,740
Transfer		550		5,779
Valuation		(40)		5,889
Disposal		-		(936)
Spin-off		-		(27,354)
Effects of exchange rate changes		-		700
Ending balance		3,328		2,818
Financial assets at fair value through other comprehensive income:				
Beginning balance	₩	935	₩	6,376
Acquisition		-		559
Valuation		-		1,559
Disposal		-		(2,676)
Spin-off		-		(5,085)
Other		-		202
Ending balance		935		935

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② Valuation techniques and inputs for assets classified as level 3 of the fair value hierarchy among the assets and liabilities measured at fair value for the year ended December 31, 2022, are as follows:

(in millions of Korean won)

	2022		
	Amount	Valuation Techniques	Inputs
Financial assets at fair value through profit or loss:			
Machinery Financial Cooperative	₩ 547	Net asset value method	-
Beneficiary certificates	2,229	Net asset value method	-
Others <sup>1</sup>	552	-	-
Subtotal	₩ 3,328		
Financial assets at fair value through other comprehensive income:			
Others <sup>2</sup>	935	-	-
Total	₩ 4,263		

<sup>1</sup> The amount of financial assets that the Group determined that there would be no significant difference between the carrying amount and the fair value is ₩ 552 million.

<sup>2</sup> The amount of financial assets that the Group determined that there would be no significant difference between the carrying amount and the fair value is ₩ 935 million.

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(3) Net gains or losses on each category of financial instruments for the years ended December 31, 2022 and 2021, are as follows:

(in millions of Korean won)

	<b>December 31, 2022</b>			
	<b>Fair Value through Profit or Loss</b>	<b>Amortized Cost</b>	<b>Other</b>	<b>Total</b>
<b>Financial income:</b>				
Interest income	₩ 2,351	₩ 7,389	₩ -	₩ 9,740
Dividend income	419	-	-	419
Gain on foreign currency transactions	-	85,569	-	85,569
Gain on foreign currency translations	-	43,858	-	43,858
Gain on repayment of payables	-	27	-	27
Financial guarantee income	-	-	1,579	1,579
Subtotal	₩ 2,770	₩ 136,843	₩ 1,579	₩ 141,192
<b>Financial expenses:</b>				
Interest expenses	-	(74,616)	(1,044)	(75,660)
Loss on foreign currency transactions	-	(58,874)	-	(58,874)
Loss on foreign currency translations	-	(51,943)	-	(51,943)
Financial guarantee expenses	-	-	(552)	(552)
Other financial expenses	-	(9)	-	(9)
Subtotal	₩ -	₩ (185,442)	₩ (1,596)	₩ (187,038)
Total	₩ 2,770	₩ (48,599)	₩ (17)	₩ (45,846)

(in millions of Korean won)

	<b>December 31, 2021</b>			
	<b>Fair Value through Profit or Loss</b>	<b>Amortized Cost</b>	<b>Other</b>	<b>Total</b>
<b>Financial income:</b>				
Interest income	₩ 1,111	₩ 7,111	₩ -	₩ 8,222
Dividend income	160	-	-	160
Gain on foreign currency transactions	-	72,896	-	72,896
Gain on foreign currency translations	-	37,704	-	37,704
Gain on repayment of payables	-	-	-	-
Financial guarantee income	-	-	-	-
Subtotal	₩ 1,271	₩ 117,711	₩ -	₩ 118,982
<b>Financial expenses:</b>				
Interest expenses	-	(91,969)	(2,360)	(94,329)
Loss on foreign currency transactions	-	(35,733)	-	(35,733)
Loss on foreign currency translations	-	(28,645)	-	(28,645)
Financial guarantee expenses	-	-	(559)	(559)
Other financial expenses	-	(1,270)	-	(1,270)
Subtotal	₩ -	₩ (157,617)	₩ (2,919)	₩ (160,536)
Total	₩ 1,271	₩ (39,906)	₩ (2,919)	₩ (41,554)

**Hyundai Doosan Infracore Co., Ltd. and Subsidiaries**  
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**41. Financial Instruments**

(1) Credit Risk

1) Exposure to credit risk

The carrying amount of financial assets and contract assets represents maximum exposure to credit risk. Maximum exposures of financial assets of the Group exposed to credit risk as at December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	<b>December 31, 2022</b>		<b>December 31, 2021</b>	
Cash and cash equivalents <sup>1</sup>	₩	296,304	₩	542,990
Short-term and long-term financial instrument (excluding equity securities)		71,908		98,071
Trade and other receivables		1,351,578		1,493,668
Long-term trade receivables and other non-current receivables		33,148		46,076
Derivative assets		38,144		1,886
Total	₩	<u>1,791,082</u>	₩	<u>2,182,691</u>

<sup>1</sup> Cash at hand is excluded.

2) Impairment loss

Aging analysis of the Group's receivables and loss allowance provision for trade receivables as at December 31, 2022 and 2021, is as follows:

<i>(in millions of Korean won)</i>		<b>December 31, 2022</b>						
	₩	Individually impaired receivables	Receivables assessed for impairment on a collective basis					Total
			Within due	0-3 months	3-6 months	6-12 months	Over 12 months	
Trade receivables	₩	102,100	₩ 588,811	₩ 40,911	₩ 5,293	₩ 1,747	₩ 9,190	₩ 748,052
Financial lease receivables		-	485,793	30,845	14,583	6,701	11,990	549,912
Other receivables		36,722	123,416	28,558	195	651	15,752	205,294
Accrued income		-	5,943	-	-	-	-	5,943
Long-term trade receivables		-	7,210	-	-	-	46	7,256
Long-term other receivables		4,747	3,809	-	-	-	-	8,556
Deposits		-	32,736	-	-	-	-	32,736
Loss allowance provision for trade receivables		(90,315)	(932)	(468)	(354)	(464)	(7,246)	(99,779)

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Loss allowance provision for lease	-	(507)	(488)	(1,028)	(1,517)	(10,763)	(14,303)
Loss allowance provision for other receivables	(41,468)	(4)	(430)	(173)	(129)	(16,585)	(58,789)
Loss allowance provision for deposits	-	(152)	-	-	-	-	(152)
<b>Total</b>	<b>₩ 11,786</b>	<b>₩ 1,246,123</b>	<b>₩ 98,928</b>	<b>₩ 18,516</b>	<b>₩ 6,989</b>	<b>₩ 2,384</b>	<b>₩ 1,384,726</b>

(in millions of Korean won)

**December 31, 2021**

	Individually impaired receivables	Receivables assessed for impairment on a collective basis					Total
		Within due	0-3 months	3-6 months	6-12 months	Over 12 months	
Trade receivables	₩ 106,997	₩ 499,409	₩ 29,477	₩ 5,392	₩ 7,152	₩ 7,962	₩ 656,389
Financial lease receivables	-	709,382	34,440	8,845	3,914	7,250	763,831
Other receivables	37,752	156,477	24,933	737	127	16,165	236,191
Accrued income	-	4,876	-	-	-	-	4,876
Short-term loans	-	1	-	-	-	-	1
Long-term trade receivables	-	7,781	-	-	-	48	7,829
Long-term other receivables	4,213	-	-	-	-	-	4,213
Deposits	-	38,405	-	-	-	-	38,405
Loss allowance provision for trade receivables	(93,187)	(756)	(288)	(344)	(2,333)	(6,893)	(103,801)
Loss allowance provision for lease	-	(747)	(251)	(427)	(875)	(7,892)	(10,192)
Loss allowance provision for other receivables	(41,830)	(4)	(245)	(44)	(18)	(15,701)	(57,842)
Loss allowance provision for deposits	-	(156)	-	-	-	-	(156)
<b>Total</b>	<b>₩ 13,945</b>	<b>₩ 1,414,668</b>	<b>₩ 88,066</b>	<b>₩ 14,159</b>	<b>₩ 7,967</b>	<b>₩ 939</b>	<b>₩ 1,539,744</b>

However, available-for-sale financial assets, held-to-maturity financial assets, deposit in financial institution and derivative instruments are individually assessed for impairment.

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(2) Liquidity Risk

1) The contractual maturities of financial liabilities as at December 31, 2022, are as follows. The amount includes interest payments and does not include the effect of offsetting arrangements.

(in millions of Korean won)

	December 31, 2022					
	Carrying amount	Nominal cash flows	0-6 months	6-12 months	1-3 years	Over 3 years
Non-derivative liabilities:						
Borrowings	₩ 1,017,811	₩ 1,081,418	₩ 256,796	₩ 155,958	₩ 668,531	₩ 133
Bonds	554,388	568,176	382,583	3,430	182,163	-
Trade and other payables	1,050,213	1,050,213	822,134	220,098	7,981	-
Lease liabilities	60,268	70,987	8,683	8,682	19,588	34,034
Derivative liabilities:						
Cash out flow	500	503	503	-	-	-
Total	₩ 2,683,180	₩ 2,771,297	₩ 1,470,699	₩ 388,168	₩ 878,263	₩ 34,167

The maximum amount of the guarantee that can be borne by the Group's financial guarantee contracts as at December 31, 2022 is ₩ 146,767 million (Note 22 and 42).

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

2) The contractual maturities of financial liabilities as at December 31, 2021, are as follows. The amount includes interest payments and does not include the effect of offsetting arrangements.

(in millions of Korean won)

	December 31, 2021					
	Carrying amount	Nominal cash flows	0-6 months	6-12 months	1-3 years	Over 3 years
Non-derivative liabilities:						
Borrowings	₩ 513,564	₩ 521,050	₩ 514,248	₩ 5,942	₩ 506	₩ 354
Bonds	1,246,136	1,296,856	61,334	709,852	525,670	-
Trade and other payables	1,028,645	1,064,331	1,058,395	5,934	2	-
Lease liabilities	24,792	26,825	14,420	6,332	5,557	516
Derivative liabilities:						
Cash outflow	2,355	2,370	2,370	-	-	-
Total	₩ 2,815,492	₩ 2,911,432	₩ 1,650,767	₩ 728,060	₩ 531,735	₩ 870

The maximum amount of the guarantee that can be borne by the Group's financial guarantee contracts as at December 31, 2021 is ₩ 230,491 million (Notes 22 and 42).

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

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3) The expected period of cash flow that is expected to be hedged using the cash flow hedging derivatives, for the years ended December 31, 2022 and 2021, are as follows:

(in millions of Korean won)

		December 31, 2022					
	Carrying amount	Nominal cash flows (include interest)	0-6 months	6-12 months	1-3 years	Over 3 years	
Foreign currency forward:							
Assets (+)	₩ 36,823	₩ 37,357	₩ 25,646	₩ 11,711	₩ -	₩ -	-
Liabilities (-)	(500)	(503)	(503)	-	-	-	-
Foreign currency swap:							
Assets (+)	1,321	2,473	294	459	1,720	-	-
Liabilities (-)	-	-	-	-	-	-	-

(in millions of Korean won)

		December 31, 2021					
	Carrying amount	Nominal cash flows (include interest)	0-6 months	6-12 months	1-3 years	Over 3 years	
Foreign currency forward:							
Assets (+)	₩ 1,886	₩ 1,902	₩ 1,902	₩ -	₩ -	₩ -	-
Liabilities (-)	(2,355)	(2,370)	(2,370)	-	-	-	-

(3) Foreign exchange risk

1) Exposure to foreign exchange risk

The Group's exposure to foreign exchange risk at December 31, 2022 and 2021, are as follows:

(in millions of Korean won)

		December 31, 2022					
	USD	EUR	CNY	JPY	Others	Total	
Cash and cash equivalents	₩ 22,272	₩ 3,129	₩ 842	₩ 738	₩ 8,990	₩ 35,971	
Trade and other receivables	439,834	266,362	23,929	17	28,650	758,792	
Total assets	₩ 462,106	₩ 269,491	₩ 24,771	₩ 755	₩ 37,640	₩ 794,763	
Trade and other payables	(61,489)	(29,296)	(210,783)	(3,696)	(38,671)	(343,935)	
Borrowings and bonds	(104,764)	(181,422)	-	(6,388)	-	(292,574)	
Total liabilities	₩ (166,253)	₩ (210,718)	₩ (210,783)	₩ (10,084)	₩ (38,671)	₩ (636,509)	
Net amounts presented in the statement of financial position	295,853	58,773	(186,012)	(9,329)	(1,031)	158,254	
Derivative contracts	(563,949)	(148,092)	-	33,552	-	(678,489)	
Net exposure amount	₩ (268,096)	₩ (89,319)	₩ (186,012)	₩ 24,223	₩ (1,031)	₩ (520,235)	

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(in millions of Korean won)

	December 31, 2021					
	USD	EUR	CNY	JPY	Others	Total
Cash and cash equivalents	₩ 48,996	₩ 819	₩ 3,838	₩ 277	₩ 12,380	₩ 66,310
Trade and other receivables	343,357	225,888	64,555	-	18,200	652,000
Total assets	₩ 392,353	₩ 226,707	₩ 68,393	₩ 277	₩ 30,580	₩ 718,310
Trade and other payables	(175,804)	(45,030)	(51,412)	(9,190)	(5,414)	(286,850)
Borrowings and bonds	(32,927)	(2,931)	(642)	(130)	(683)	(37,313)
Total liabilities	₩ (208,731)	₩ (47,961)	₩ (52,054)	₩ (9,320)	₩ (6,097)	₩ (324,163)
Net amounts presented in the statement of financial position	183,622	178,746	16,339	(9,043)	24,483	394,147
Derivative contracts	(373,433)	(101,615)	-	26,786	-	(448,262)
Net exposure amount	₩ (189,811)	₩ 77,131	₩ 16,339	₩ 17,743	₩ 24,483	₩ (54,115)

2) Sensitivity analysis

As at the end of the reporting period, if the exchange rate of the Korean won is higher than USD, EUR, CNY, JPY, or other currencies, the Group's profit or loss would have increased or decreased. This analysis assumes variability that the Group believes is reasonably probable at the end of each period.

The changes profit or loss are as follows:

(in million of Korean won)

	Changes in exchange rates	Effect on profit or loss	
		2022	2021
USD	3% increase	₩ (8,043)	₩ (5,694)
EUR	3% increase	(2,680)	2,314
CNY	3% increase	(5,580)	490
JPY	3% increase	727	532
Others	3% increase	(31)	734

If all other variables are held constant, strengthening of won by the same percentage would result in opposite effect by the same amount.

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#### (4) Interest Rate Risk

1) Details of the Group's interest-bearing financial instruments as at December 31, 2022 and 2021, are as follows:

(in millions of Korean won)

	December 31, 2022		December 31, 2021	
Fixed interest rates				
Financial assets	₩	309,203	₩	324,808
Financial liabilities		(1,251,528)		(1,715,818)
Total	₩	(942,325)	₩	(1,391,010)
Floating interest rates				
Financial assets		37,536		262,873
Financial liabilities		(321,168)		(34,371)
Total	₩	(283,632)	₩	228,502

#### 2) Fair value sensitivity analysis for fixed rate instruments

Interest rate risk arises from savings and borrowings with floating interest rates. The Group properly hedges the risk borrowings with floating interest rates through interest rate swaps.

Interest rate swap contracts as at December 31, 2022, are as follows:

(in thousand of USD)

Type	Notional amount	Details of contracts	Maturity date
Woori Bank	USD 30,000	Floating interest rate and receipt of foreign currency	2025-04-03
		Fixed interest rate and payment in Korean won	
		3M Compounded SOFR + 0.95%	
		3.63%	

#### 3) Cash flow sensitivity analysis for floating rate instruments

A change of 100 basis points in interest rates as at December 31, 2022, would have increased (decreased) profit or loss by the amounts shown below. This analysis assumes that all other variables, in particular foreign currency rates, remain constant. The changes profit or loss are as follows:

(in millions of Korean won)

	2022		2021	
	100 bp increase	100 bp decrease	100 bp increase	100 bp decrease
Profit (loss) before income tax expense	₩ (2,836)	₩ 2,836	₩ 2,285	₩ (2,285)

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**42. Commitments and Contingencies**

(1) As at December 31, 2022, the Group has entered into bank general loan agreements amounting to ₩ 1,393,324 million with various financial institutions.

(2) Among our long-term investment securities, subordinated bonds (Carrying amount: ₩ 15,255 million) are pledged as collateral to KODIT 2020 15th Securitization Specialty Co., Ltd and others in relation to bonds.

(3) The financial liabilities related to the transferred receivables that the Group continues to recognize because the Group substantially retains all of the risks and rewards of ownership as at December 31, 2022, amount to ₩ 6,871 million.

(4) As at December 31, 2022, guarantees provided by the Group for third parties are as follows:

*(in thousands of foreign currencies and millions of Korean won)*

<b>Guarantor</b>	<b>Beneficiary</b>	<b>Guaranteed amount</b>	<b>Korean won equivalent</b>
Doosan Infracore China Co., Ltd.	End User	CNY 771,033	₩ 139,896

Meanwhile, as at December 31, 2022, the Group has been provided with guarantees in relation to Floating-Rate Note (FRN) amounting to USD 30,600 thousand by Woori Bank. Also, the Group entered into agreements with various banks for performance guarantees of USD 1,544 thousand regarding exports and others, and with Seoul Guarantee Insurance Company and Machinery Financial Cooperative for performance and warranty guarantees of ₩ 30,428 million in total. Regarding guarantees provided by Machinery Financial Cooperative, equity investment of ₩ 100 million in Machinery Financial Cooperative is also pledged as a collateral.

**43. Major Lawsuits**

As at December 31, 2022, the Group is involved in various pending lawsuits with total claims amounting to ₩ 10,802 million, and the Group recognized provision for litigation for ₩ 1,291 million. The outcome of the lawsuit and its effects cannot be reasonably estimated as at December 31, 2022.

# Hyundai Doosan Infracore Co., Ltd. and Subsidiaries

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#### 44. Related Party Transactions

(1) The major related parties of the Group as at December 31, 2022, are as follows:

Type	Name of entity	Type of business
Ultimate parent	HD HYUNDAI CO.,LTD. <sup>1</sup>	Holdings company
Next most senior parent	Hyundai Genuine Co., Ltd.	Manufacture of machinery for construction and mining
Associates and joint ventures	Doosan Infracore Liaoning Machinery Sales Co., Ltd	Sales of excavators, etc.
	PoteNit Co.,Ltd.	Manufacture of industrial robots, etc.
Other related parties (large-scale business group affiliated company, etc)	HYUNDAI HEAVY INDUSTRIES CO., LTD..	Manufacture of ships, offshore structures, plants and engines
	Hyundai Construction Equipment Co., Ltd.	Manufacturing and sales of construction machinery
	KOREA SHIPBUILDING & OFFSHORE ENGINEERING CO.,LTD.	Shipbuilding
	HYUNDAI SAMHO HEAVY INDUSTRIES CO., LTD.	Shipbuilding
	Hyundai Oil Bank Co.,Ltd.	Manufacture of petroleum products
	Changzhou Hyundai Hydraulic Machinery Co., Ltd.	Production and sales of hydraulic cylinders
	Hyundai Heavy Industries (China) Investment Co.,Ltd.	Holding company
	Hyundai Financial Leasing Co., Ltd.	Financial business like loan lease
	Hyundai (Jiangsu) Engineering Machinery Co., Ltd.	Manufacturing and sales of construction machinery
	Hyundai Oilbank (Shanghai) Co., Ltd.	Trading of petroleum products
Hyundai Construction Equipment Americas.,Inc.	Sales of construction machinery	
Hyundai Heavy Industries Brasil - Manufacturing and Trading of Construction Equipment	Manufacturing and sales of construction machinery	
Other related parties		Others

<sup>1</sup> For the year ended December 31, 2022, the entity changed its name to HD HYUNDAI CO.,LTD.. from HYUNDAI HEAVY INDUSTRIES HOLDINGS CO.,LTD.

# Hyundai Doosan Infracore Co., Ltd. and Subsidiaries

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

(in millions of Korean won)

Type	Name of entity	2022							
		Sales	Other sales <sup>1</sup>	Purchase of raw materials	Acquisition of property, plant and equipment and intangible assets	Acquisition of right-of-use asset	Other purchases <sup>2</sup>		
Ultimate parent	HYUNDAI HEAVY INDUSTRIES HOLDINGS CO.,LTD.	₩ -	₩ -	₩ -	₩ -	₩ -	₩ -	₩ 19,002	₩ 707
Next most senior parent	Hyundai Genuine Co., Ltd.	504	8	-	277	-	-	-	12,814
Joint ventures	Doosan Infracore Liaoning Machinery Sales Co., Ltd	8,605	-	-	-	-	-	-	-
Other related parties <sup>1</sup>	HYUNDAI HEAVY INDUSTRIES CO., LTD..	-	-	-	-	-	-	-	338
	Hyundai Construction Equipment Co., Ltd.	13,497	-	2,785	-	-	-	-	55
	KOREA SHIPBUILDING & OFFSHORE ENGINEERING CO.,LTD.	-	-	-	-	-	-	-	899
	HYUNDAI SAMHO HEAVY INDUSTRIES CO., LTD.	-	-	4,535	-	-	-	-	-
	Hyundai Oil Bank Co.,Ltd.	-	-	9,882	-	-	-	-	-
	Changzhou Hyundai Hydraulic Machinery Co., Ltd.	-	-	891	-	-	-	-	219
	Hyundai Heavy Industries (China) Investment Co.,Ltd.	-	-	-	-	-	-	-	530
	Hyundai Financial Leasing Co., Ltd.	188	-	-	-	-	-	-	-
	Hyundai (Jiangsu) Engineering Machinery Co., Ltd.	116	-	-	-	-	-	-	-
	Hyundai Oilbank (Shanghai) Co., Ltd.	-	-	1	-	-	-	-	-
	Hyundai Construction Equipment Americas.,Inc.	2,417	-	-	-	-	-	-	-
	Hyundai Heavy Industries Brasil - Manufacturing and Trading of Construction Equipment	-	327	-	-	-	-	-	-
	Total	₩ 25,327	₩ 335	₩ 18,094	₩ 277	₩ 19,002	₩ 15,562		

<sup>1</sup> Other sales include the amount of disposal of property, plant and equipment and intangible assets.

# Hyundai Doosan Infracore Co., Ltd. and Subsidiaries

## Notes to the Consolidated Financial Statements

### December 31, 2022 and 2021

<sup>2</sup> Other purchases include lease payments of ₩333 million.

(in millions of Korean won)

		2021													
Type	Name of entity	Sales		Disposal of property, plant and equipment and intangible assets		Other income		Purchases		Acquisition of property, plant and equipment and intangible assets		Other expenses		Acquisition of right-of-use asset	
		₩		₩		₩		₩		₩		₩		₩	
Ultimate parent	Doosan Corporation	₩	27,930	₩	60	₩	1	₩	44	₩	2,843	₩	31,422	₩	-
	HYUNDAI HEAVY INDUSTRIES HOLDINGS CO.,LTD.		-		-		-		-		-		2,094		-
Next most senior parent	Doosan Heavy Industries and Construction Co., Ltd.		452		628		-		-		-		-		-
	Hyundai Genuine Co., Ltd.		-		-		-		-		-		599		-
Joint ventures and associates	Doosan Infracore Liaoning Machinery Sales Co., Ltd		17,767		-		-		-		-		-		-
	Tianjin Lovol Doosan Engine Company Ltd.		2,449		-		-		5,137		-		630		-
Other related parties <sup>11</sup>	KOREA SHIPBUILDING & OFFSHORE ENGINEERING CO.,LTD		-		-		-		-		-		255		-
	Hyundai Oil Bank Co.,Ltd.		-		-		-		279		-		4		-
	Hyundai Construction Equipment Co., Ltd.		-		-		-		-		-		64		-
	HYUNDAI HEAVY INDUSTRIES BRASIL IND		-		42		-		-		-		-		-
	Clark Equipment Co.		20,015		-		-		719		-		265		-
	Doosan Bobcat EMEA s.r.o		3,598		-		-		488		-		201		-
	Doosan Bobcat Inc. and its other subsidiaries		5,808		-		-		218		-		109		-
	Doosan Bears Inc.		-		-		-		-		-		15,142		-
	Doosan Digital Innovation America LLC		-		-		3		-		-		22,837		1,426
	Bundang Doosan Tower tenants committee		-		-		-		-		-		2,263		71,403
	Doosan Cuvex Co., Ltd.		73		10		-		250		-		6,802		-
	CHUNG-ANG UNIVERSITY		-		-		-		-		-		5,924		-
	Doosan Business Research Institute		152		-		-		-		-		4,834		-
	Other related parties related to Doosan Corporation		631		-		462		-		420		7,093		-
	<b>Total</b>	₩	<b>78,875</b>	₩	<b>740</b>	₩	<b>466</b>	₩	<b>7,135</b>	₩	<b>3,263</b>	₩	<b>100,538</b>	₩	<b>72,829</b>

# Hyundai Doosan Infracore Co., Ltd. and Subsidiaries

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<sup>1</sup> Doosan Bobcat Inc. and its subsidiaries and D20 Capital, LLC and others were changed from subsidiaries to other related parties due to the spin-off and merger on July 1, 2021. Doosan Cuvex Co., Ltd. and DBC Co., Ltd. and others were changed from joint ventures and associates to other related parties.

The above information of Doosan Corporation and its subsidiaries includes the transaction amount before the change of parent company, and the information of HYUNDAI HEAVY INDUSTRIES HOLDINGS CO.,LTD. and its subsidiaries includes the transaction amount after the change of parent company.

(3) Outstanding balances of significant receivables and payables for related parties as at December 31, 2022 and 2021, are as follows:

(in millions of Korean won)

Type		2022			
		Trade receivables	Other receivables	Trade payables	Other payables <sup>1</sup>
Ultimate parent	HYUNDAI HEAVY INDUSTRIES HOLDINGS CO.,LTD.	₩ -	₩ 4,490	₩ -	₩ 18,800
Next most senior parent	Hyundai Genuine Co., Ltd.	25	195	-	3,665
Joint ventures	Doosan Infracore Liaoning Machinery Sales Co., Ltd	700	-	-	10
Other related parties	HYUNDAI HEAVY INDUSTRIES CO., LTD.	-	-	-	147
	Hyundai Construction Equipment Co., Ltd.	3,574	255	1,816	203
	KOREA SHIPBUILDING & OFFSHORE ENGINEERING CO.,LTD.	-	-	-	231
	HYUNDAI SAMHO HEAVY INDUSTRIES CO., LTD.	-	-	440	-
	Hyundai Oil Bank Co.,Ltd.	-	-	5,083	31
	Changzhou Hyundai Hydraulic Machinery Co., Ltd.	-	-	803	-
	Hyundai Heavy Industries (China) Investment Co.,Ltd.	-	21	-	-
	Hyundai Financial Leasing Co., Ltd.	-	-	-	-
	Hyundai (Jiangsu) Engineering Machinery Co., Ltd.	-	-	-	-
	Hyundai Oilbank (Shanghai) Co., Ltd.	-	-	-	-
	Hyundai Construction Equipment Americas.,Inc.	1,553	-	-	-

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Hyundai Heavy Industries Brasil - Manufacturing and Trading of Construction Equipment	-	-	-	-
	₩ 5,852	₩ 4,961	₩ 8,142	₩ 23,087

<sup>1</sup> Other payables include lease liabilities of ₩18,768 million.

(in millions of Korean won)

Type	Name of entity	2021		
		Trade receivables	Trade payables	Other payables
Ultimate parent	HYUNDAI HEAVY INDUSTRIES HOLDINGS CO.,LTD.	₩ -	₩ -	₩ 33
Next most senior parent	Hyundai Genuine Co., Ltd.	-	-	659
Joint ventures and associates	Tianjin Lovol Doosan Engine Company Ltd.	1,511	939	-
	Doosan Infracore Liaoning Machinery Sales Co., Ltd	729	-	15
Other related parties	KOREA SHIPBUILDING & OFFSHORE ENGINEERING CO.,LTD	-	-	4
	Hyundai Oil Bank Co.,Ltd.	-	280	1
	Total	₩ 2,240	₩ 1,219	₩ 712

(4) There are no fund transactions (including equity transactions) with related parties for the years ended December 31, 2022 and 2021.

(5) For the year ended December 31, 2022, the Group acquired 50% of the residual shares of Tianjin Lovol Doosan Engine Company Ltd., which was a joint venture, for ₩ 5,017 million, and was reclassified it as a subsidiary. In addition, the Group invested an additional ₩2,730 million and changed its name to Tianjin Hyundai Doosan Engine Co., Ltd.

(6) There are no collaterals provided to related parties as at December 31, 2022.

(7) The compensation to the key management personnel of the Group for the years ended December 31, 2022 and 2021, is as follows:

(in millions of Korean won)

	2022		2021	
Short-term benefits	₩	2,235	₩	2,166
Post-employment benefits		279		58
Total	₩	2,514	₩	2,224

The above key management includes executive directors (include external directors) who have significant authority and responsibility for planning, operation and control on the Group's operation.

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**45. Discontinued Operation**

(1) Details of the discontinued operation for the year ended December 31, 2021, are as follows:

<b>Category</b>	<b>2021</b>
Discontinued operation	Business segments of Doosan Bobcat Co., Ltd. and others
Major operation	Manufacturing and sales of small construction equipment and others
Method of discontinuance	Spin-off

(2) Profit and loss from discontinued operation for the year ended December 31, 2021, are as follows:

<i>(in millions of Korean won)</i>	<b>2021</b>
Revenue	₩ 2,335,874
Cost of goods sold	1,713,858
Selling and administrative expenses	269,867
Operating profit	352,149
Non-operating income or expense	(15,849)
Profit before income tax	336,300
Income tax benefit	(119,952)
Profit from discontinued operations	<u>₩ 456,252</u>

(3) Cash flows from discontinued operations for the year ended December 31, 2021, are as follows:

<i>(in millions of Korean won)</i>	<b>2021</b>
Net cash inflow from operating activities	₩ 419,750
Net cash outflow from investing activities	(128,509)
Net cash outflow from financing activities	489,599
Effects of exchange rate changes	(27,600)
Net increase in cash generated from discontinued operations	<u>₩ 753,240</u>

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**46. Business Combination**

1) Tianjin Hyundai Doosan Engine Co., Ltd. was established on January 19, 2018, through joint investment of 50/50 with Arbos Technology Group Co., Ltd. (formerly, Tianjin Lovol Heavy industry).

On December 6, 2022, the Group additionally acquired 50% of shares of Arbos Technology Group Co., Ltd. for ₩ 5,017 million and obtained control.

2) The following table summarizes the consideration paid for Arbos Technology Group Co., Ltd., the book amount of assets acquired and liabilities assumed:

<i>(in millions of Korean won)</i>	<b>Amount</b>	
Consideration		
Cash and cash equivalents	₩	5,017
		<u>5,017</u>
Fair value of shares owned before the business combination		<u>5,017</u>
Total consideration transferred	₩	<u>10,034</u>
Recognized amounts of identifiable assets acquired and liabilities assumed		
Cash and cash equivalents		932
Trade receivables and other receivables		1,933
Inventories		5,099
Property, plant and equipment		15,199
Right-of-use assets		18,110
Other assets		296
Trade payables and other payables		(13,366)
Long-term and short-term lease liabilities		(18,169)
	₩	<u>10,034</u>

3) For the year ended December 31, 2022, the Group recognized ₩ 6,609 million as other non-operating income in the consolidated statement of income, including the measurement of the fair value of the 50% shares owned by the Group before the business combination.