

LG CHEM, LTD. AND SUBSIDIARIES

**Consolidated Financial Statements and
Internal Control over Financial Reporting**

**As of and for the Years Ended
December 31, 2023 and 2022**



LG Chem, Ltd. and Subsidiaries
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As of and for the Years Ended December 31, 2023 and 2022

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Independent Auditor's Report

(English Translation of a Report Originally Issued in Korean)

To the Shareholders and Board of Directors of
LG Chem, Ltd.:

Opinion

We have audited the accompanying consolidated financial statements of LG Chem, Ltd. and its subsidiaries (collectively referred to as the "Group"), which comprise the consolidated statement of financial position as of December 31, 2023, and the related consolidated statement of profit or loss, consolidated statement of comprehensive income, consolidated statement of changes in equity and consolidated statement of cash flows, all expressed in Korean won, for the year ended December 31, 2023, and notes to the consolidated financial statements, including material accounting policies.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Group as of December 31, 2023, and its consolidated financial performance and its consolidated cash flows for the year ended December 31, 2023, in accordance with International Financial Reporting Standards as adopted by the Republic of Korea ("Korean IFRS").

We also have audited, in accordance with Korean Standards on Auditing, the Internal Control over Financial Reporting of the Group as of December 31, 2023, based on *Conceptual Framework for Designing and Operating Internal Control over Financial Reporting*, and our report dated March 7, 2024, expressed an unqualified opinion.

Basis for Opinion

We conducted our audit 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.

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 for CGUs to which Goodwill has been Allocated

Why this matter was determined to be a key audit matter

The Group annually performs impairment assessment on the goodwill. We focused on goodwill impairment assessment due to the significant size of goodwill balance (₩1,061,174 million as of December 31, 2023) and management's involvement in assumptions and judgments in the future results of the business, discount rate and adjustments arising from the perspective of market participants used in the measurement of the 'recoverable amount' of the Group's Cash-Generating Units (CGUs). Details are described in Note 12.

In particular, we focused our audit effort on the goodwill recognized in relation to the Life Sciences CGU (₩ 391,311 million as of December 31, 2023) and the Separator CGU (₩160,577 million as of December 31, 2023), which are significant elements among all relevant CGUs with goodwill. The Group management determined that there was a sufficient amount between the value in use and the underlying book value of those CGUs. Considering the size of the balance and impairment loss recognized on this goodwill, as well as management's involvement in significant assumptions and judgments for the estimation of value in use, we have determined this matter as a key audit matter.

How this matter was addressed in our audit

We have performed the following audit procedures to address this key audit matter, including the involvement of valuation specialists:

- Obtained an understanding of and evaluated accounting policy and internal controls related to the impairment assessment.
- Assessed the design and operating effectiveness of relevant internal controls in place in connection with impairment assessment, including review and approval by management of future cash flow forecasts and assumptions applied in the assessment.
- Assessed the objectivity and eligibility of the expert utilized by the management.
- Assessed whether an appropriate valuation model has been used by management to estimate value in use.
- Assessment of the appropriateness of management's business plan estimates by comparing actual performance to the past business plans of the relevant CGU.
- Confirm whether the estimation of future cash flows related to impairment assessments is based on the business plans approved by the management, excluding certain adjusted cash flows from the perspective of market participants.
- Review the validity of applied key significant assumptions (economic and industry forecasts, perpetual growth rate, discount rate, etc.) in terms of value-in-use evaluation.
- Review the adequacy of the comparable book value allocated to CGU subject to evaluation.

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- Evaluate the impact on impairment assessment results due to variations in key assumptions,- through sensitivity analysis for perpetuity terminal rates and discount rates applied in impairment assessments.

(2) Warranty provision of LG Energy Solution, Ltd. for GM Bolt recall

Why this matter was determined to be a key audit matter

As indicated in Notes 4 and 15 of the consolidated financial statements, the group has recognized warranty provisions (current balance at the end of current period :1,279,460 million won) related to warranty repair and recalls, etc.

In particular, we focused our audit effort on the measurement of the warranty provision established for General Motors Company ("GM")'s voluntary recall decision(₩ 96,857 million as of December 31, 2023). GM is a customer of LG Energy Solution. Due to the management's involvement in significant assumptions and judgments (estimation of number of vehicles subject to recall and the expected total repair costs, etc.) in the measurement of warranty provision, we have determined this matter as a key audit matter.

How this matter was addressed in our audit

We have performed the following audit procedures to address this key audit matter, including the involvement of the independent auditors of LG Energy Solution.

- Obtained an understanding of the Group's accounting policies and internal controls in place related to the warranty provision and evaluated the design and operating effectiveness of relevant internal controls.
- Performed the following procedures to assess whether the input data used by management for the estimation is appropriate.
 - Compared the data used by management for the estimation of warranty provision with internal and external information.
 - Assessed whether the assumptions and input data used are reasonable by involving auditor's specialists.
- Assessed the competence and objectivity of the expert utilized by the management.
- Mathematically recalculated the estimated warranty provision.
- Assessment of the appropriateness of relevant note disclosures.

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 financial statements may differ from those generally accepted and applied in other countries.

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The accompanying consolidated financial statements as of and for the year ended December 31, 2022, were audited by Samil PricewaterhouseCoopers in accordance with the audit standards of Korea. This auditor's audit report, dated March 9, 2023, expressed unqualified opinion.

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.
- 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

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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.

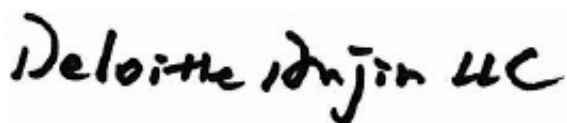
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate 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 Young-Jae Kim, Certified Public Accountant.



Seoul, Korea

March 7, 2024

This report is effective as of March 7, 2024, the audit report date. Certain subsequent events or circumstances, which may occur between the audit report date and the time of reading this report, could have a material impact on the accompanying 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 an .

LG Chem, Ltd. and Subsidiaries
Consolidated Statements of Financial Position
As of December 31, 2023 and 2022

<i>(In millions of Korean won)</i>	Notes	2023	2022
Assets			
Current assets			
Cash and cash equivalents	3, 5, 6	9,084,899	8,497,882
Trade receivables	3, 5, 7, 31	8,082,952	7,450,395
Other receivables	3, 5, 7, 31	682,178	742,431
Other current financial assets	3, 5, 8	141,428	9,167
Prepaid income taxes		86,032	52,920
Other current assets	13	1,211,374	1,013,463
Inventories	9	9,375,327	11,880,631
Assets held for sale	34	195,106	27,480
Total current assets		28,859,296	29,674,369
Non-current assets			
Trade receivables	3, 5, 7	129,996	120,698
Other receivables	3, 5, 7	427,693	617,444
Other non-current financial assets	3, 5, 8	1,228,501	1,237,167
Investments in associates and joint ventures	1, 10, 33	1,005,606	949,553
Deferred tax assets	28	2,308,966	2,165,557
Property, plant and equipment	11	38,950,393	29,662,743
Intangible assets	12	3,692,922	2,690,203
Investment properties	36	88,950	94,026
Other non-current assets	13, 16	774,371	762,063
Total non-current assets		48,607,398	38,299,454
Total assets		77,466,694	67,973,823
Liabilities			
Current liabilities			
Trade payables	3, 5, 31	4,117,913	4,756,246
Other payables	3, 5, 31	4,905,081	4,899,553
Borrowings	3, 5, 14	7,077,782	3,804,367
Other current financial liabilities	3, 5, 8	523,910	7,271
Provisions	15	546,950	1,026,446
Income tax payables		45,304	626,226
Other current liabilities	17, 35	1,146,844	1,339,454
Liabilities of the disposal group classified as held for sale	34	27,055	-
Total current liabilities		18,390,839	16,459,563
Non-current liabilities			
Other payables	3, 5	33,418	43,708
Borrowings	3, 5, 14	14,850,332	12,160,152
Other non-current financial liabilities	3, 5, 8	99,950	33,319
Provisions	15	887,775	533,414
Net defined benefit liabilities	13, 16	11,879	19,470
Deferred tax liabilities	28	735,326	838,725
Other non-current liabilities	17, 35	1,518,990	404,345
Total non-current liabilities		18,137,670	14,033,133
Total liabilities		36,528,509	30,492,696
Equity			
Share capital	1, 19	391,406	391,406
Capital surplus	19	11,572,098	11,569,556
Other components of equity	21	(19,569)	(19,569)
Accumulated other comprehensive income		598,038	366,916

LG Chem, Ltd. and Subsidiaries
Consolidated Statements of Financial Position
As of December 31, 2023 and 2022

<i>(In millions of Korean won)</i>	Notes	2023	2022
Retained earnings	20	19,650,632	19,142,263
Equity attributable to owners of the Parent Company		32,192,605	31,450,572
Non-controlling interests	1	8,745,580	6,030,555
Total equity		40,938,185	37,481,127
Total liabilities and equity		77,466,694	67,973,823

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

LG Chem, Ltd. and Subsidiaries
Consolidated Statements of Profit or Loss
For the Years Ended December 31, 2023 and 2022

<i>(In millions of Korean won, except per share amounts)</i>	Notes	2023	2022
Revenue	22, 31, 33, 35	55,249,785	50,983,251
Cost of sales	22, 23, 31	<u>(46,463,916)</u>	<u>(41,122,379)</u>
Gross profit		8,785,869	9,860,872
Other operating revenue	22	676,874	-
Selling and administrative expenses	22, 23, 31	<u>(6,933,547)</u>	<u>(6,881,518)</u>
Operating profit	22, 33	2,529,196	2,979,354
Financial income	5, 25	1,787,245	913,786
Financial costs	5, 25	(1,665,265)	(1,202,630)
Share of net loss of associates and joint ventures accounted for using the equity method	10	(33,311)	(46,215)
Other non-operating income	5, 26	1,733,332	2,247,549
Other non-operating expenses	5, 27	<u>(1,853,057)</u>	<u>(2,113,552)</u>
Profit before income tax	32	2,498,140	2,778,292
Income tax expense	28	<u>(432,501)</u>	<u>(637,124)</u>
Profit from continuing operations		<u>2,065,639</u>	<u>2,141,168</u>
(Loss) profit from discontinued operations	34	<u>(12,214)</u>	<u>54,350</u>
Profit for the year		<u>2,053,425</u>	<u>2,195,518</u>
Profit is attributable to:			
Owners of the Parent Company			
Profit from continuing operations		1,347,764	1,787,935
Profit from discontinued operations		<u>(9,952)</u>	<u>57,428</u>
		1,337,812	1,845,363
Non-controlling interests			
Profit from continuing operations		717,875	353,233
Profit from discontinued operations		<u>(2,262)</u>	<u>(3,078)</u>
		715,613	350,155
Earnings per share for profit			
attributable to the equity holders			
of the Parent Company (in won)	29		
Basic earnings per ordinary share		17,086	23,670
Basic earnings per preferred share		17,136	23,720
Earnings per share for profit from continuing operations			
attributable to the equity holders			
of the Parent Company (in won)	29		
Basic earnings per ordinary share		17,213	22,934
Basic earnings per preferred share		17,263	22,984

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

LG Chem, Ltd. and Subsidiaries
Consolidated Statements of Comprehensive Income
For the Years Ended December 31, 2023 and 2022

(In millions of Korean won)

	Notes	2023	2022
Profit for the year		<u>2,053,425</u>	<u>2,195,518</u>
Other comprehensive income			
<i>Items that will not be reclassified to profit or loss</i>			
Remeasurements of net defined benefit liabilities	16	(67,408)	193,125
Loss on valuation of financial assets at fair value through other comprehensive income		(222,998)	(51,355)
Shares of remeasurements of net defined benefit liabilities of associates		(619)	(307)
Income tax relating to these items		80,141	(28,118)
<i>Items that may be subsequently reclassified to profit or loss</i>			
Exchange differences on translation of foreign operations		455,653	(159,601)
Cash flow hedge		(17,203)	6,021
Shares of other comprehensive income of associates and joint ventures		25,036	17,304
Reclassification due to disposition among other comprehensive income and losses of joint enterprises		(2,617)	-
Income tax relating to these items		14,946	(38,003)
Other comprehensive income (loss) for the year, net of tax		<u>264,931</u>	<u>(60,934)</u>
Total comprehensive income for the year		<u>2,318,356</u>	<u>2,134,584</u>
Total comprehensive income for the year is attributable to:			
Owners of the Parent Company		1,522,326	1,800,935
Non-controlling interest		796,030	333,649

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

LG Chem, Ltd. and Subsidiaries
Consolidated Statements of Changes in Equity
For the Years Ended December 31, 2023 and 2022

(In millions of Korean won)

Notes	Attributable to owners of the Parent Company						Non-controlling interests	Total equity
	Share capital	Capital surplus	Other components of equity	Accumulated other comprehensive income	Retained earnings	Total		
Balance at January 1, 2022	391,406	2,696,385	(37,310)	551,354	18,091,949	21,693,784	1,516,204	23,209,988
Comprehensive income								
Profit for the year	-	-	-	-	1,845,363	1,845,363	350,155	2,195,518
Remeasurements of net defined benefit liabilities	16	-	-	-	140,317	140,317	9,015	149,332
Exchange differences on translation of foreign operations	-	-	-	(160,494)	-	(160,494)	(35,505)	(195,999)
Gain on valuation of financial assets at fair value through other comprehensive income	-	-	-	(42,478)	-	(42,478)	6,800	(35,678)
Cash flow hedge	-	-	-	3,913	-	3,913	502	4,415
Others	-	-	-	14,621	(307)	14,314	2,682	16,996
Total comprehensive income for the year	-	-	-	(184,438)	1,985,373	1,800,935	333,649	2,134,584
Transactions with owners:								
Disposal of treasury shares	-	192,119	17,741	-	-	209,860	-	209,860
Dividends	30	(30,428)	-	-	(935,275)	(965,703)	(155,964)	(1,121,667)
Changes in percentage of ownership in subsidiaries	-	8,711,480	-	-	-	8,711,480	3,297,254	12,008,734
Increase in paid-in capital of a subsidiary	-	-	-	-	-	-	1,039,821	1,039,821
Others	-	-	-	-	216	216	(409)	(193)
Total transactions with owners	-	8,873,171	17,741	-	(935,059)	7,955,853	4,180,702	12,136,555
Balance at December 31, 2022	391,406	11,569,556	(19,569)	366,916	19,142,263	31,450,572	6,030,555	37,481,127
Balance at January 1, 2023	391,406	11,569,556	(19,569)	366,916	19,142,263	31,450,572	6,030,555	37,481,127
Comprehensive income								
Profit for the year	-	-	-	-	1,337,812	1,337,812	715,613	2,053,425
Remeasurements of net defined benefit liabilities	16	-	-	-	(45,989)	(45,989)	(4,940)	(50,929)
Exchange differences on translation of foreign operations	-	-	-	360,364	-	360,364	105,958	466,322
Gain (loss) on valuation of financial assets at fair value through other comprehensive income	-	-	-	(140,258)	-	(140,258)	(19,079)	(159,337)
Cash flow hedge	-	-	-	(10,578)	-	(10,578)	(2,347)	(12,925)
Others	-	-	-	21,594	(619)	20,975	825	21,800
Total comprehensive income for the year	-	-	-	231,122	1,291,204	1,522,326	796,030	2,318,356
Transactions with owners:								
Dividends	30	-	-	-	(783,135)	(783,135)	(92,872)	(876,007)
Changes in percentage of ownership in subsidiaries	-	-	-	-	-	-	-	-
Increase in paid-in capital of a subsidiary	-	2,542	-	-	-	2,542	2,209,547	2,212,089
Others	-	-	-	-	300	300	(197,680)	(197,380)
Total transactions with owners	-	2,542	-	-	(782,835)	(780,293)	1,918,995	1,138,702
Balance at December 31, 2023	391,406	11,572,098	(19,569)	598,038	19,650,632	32,192,605	8,745,580	40,938,185

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

LG Chem, Ltd. and Subsidiaries
Consolidated Statements of Cash Flows
For the Years Ended December 31, 2023 and 2022

<i>(In millions of Korean won)</i>	Notes	2023	2022
Cash flows from operating activities			
Cash generated from operations	32	9,138,609	2,350,297
Interest received		362,570	225,469
Interest paid		(646,478)	(303,726)
Dividends received		30,222	5,289
Income taxes paid		(1,348,461)	(1,707,449)
Net cash inflow from operating activities		<u>7,536,462</u>	<u>569,880</u>
Cash flows from investing activities			
Decrease in other receivables		632,845	6,492,596
Proceeds from disposal of other financial instruments		5,737	40,245
Proceeds from disposal of property, plant and equipment		110,680	82,155
Proceeds from disposal of intangible assets		1,829	24,026
Government grants received		399,056	213,224
Net cash inflows from changes in scope of consolidation		-	49,780
Proceeds from disposal of assets held for sale		35,962	45,688
Proceeds from transfer of business		154,880	-
Increase in other receivables		(323,763)	(6,403,990)
Acquisition of investments in associates and joint ventures		(92,907)	(466,012)
Acquisition of other financial assets		(274,520)	(724,235)
Acquisition of property, plant and equipment		(12,959,891)	(8,406,288)
Acquisition of intangible assets		(152,879)	(167,420)
Cash outflows from transfer of business		(702,227)	(8,986)
Other cash outflows from investing activities.		(4,431)	-
Net cash outflow from investing activities		<u>(13,169,629)</u>	<u>(9,229,217)</u>
Cash flows from financing activities			
Proceeds from borrowings		13,166,116	5,321,709
Disposal of treasury shares		-	256,994
Capital contribution from non-controlling interests		2,212,089	13,660,077
Settlement of derivative instruments transactions		-	5,712
Repayments of borrowings and others		(8,116,581)	(4,821,727)
Dividends paid		(1,104,120)	(1,090,909)
Net cash inflow from financing activities		<u>6,157,504</u>	<u>13,331,856</u>
Net increase in cash and cash equivalents			
Cash and cash equivalents at the beginning of the year		8,497,882	3,760,834
Effects of exchange rate changes on cash and cash equivalents		86,557	64,529
Cash equivalents included in disposal group classified as held for sale		(23,877)	-
Cash and cash equivalents at the end of the year in the consolidated statement of financial position		<u>9,084,899</u>	<u>8,497,882</u>

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

LG Chem, Ltd. and Subsidiaries

Notes to the Consolidated Financial Statements

As of and for the Years Ended December 31, 2023 and 2022

1. GENERAL INFORMATION:

General information about LG Chem, Ltd. (the "Parent Company") and its 71 subsidiaries (collectively referred to as "Group") is as follows:

1.1 The Parent Company

The Parent Company was spun off on April 1, 2001, from LG Chem Investment Ltd. (now LG Corp., formerly LG Chemical Ltd.).

As of December 31, 2023, the Group has its manufacturing facilities in Yeosu, Daesan, Ochang, Cheongju, Naju, Iksan, Osong, Onsan, Gimcheon and overseas sites.

As of December 31, 2023, the company's capital, including the preferred share capital of ₩38,444 million, is ₩391,406 million. The largest shareholder of the Parent Company is LG Corp., which owns 33.34% of the Parent Company's ordinary shares.

The Parent Company is authorized to issue 292 million shares of ordinary shares with par value of ₩5,000 per share. As of December 31, 2023, the Parent Company has 70,592,343 ordinary shares and 7,688,800 preferred shares issued and outstanding. Preferred shareholders have no voting rights, but are entitled to receive dividends at a rate of 1% more than those paid to ordinary shareholders.

1.2 Business Overview

The Group is engaged in Petrochemicals, Energy solutions and Advanced materials business, and also engaged in Life Sciences business acquired through a merger with LG Life Sciences, Ltd. in January 2017. In addition, the Parent Company acquired 100% shares of FarmHannong Co., Ltd., in April 2016, which is engaged to manufacture crop protection products, seeds, fertilizers and others.

The Petrochemical business includes the production of olefin petrochemicals, such as ethylene, propylene, butadiene from Naphtha and aromatic petrochemicals, such as benzene. It also includes production of synthetic resin and synthetic components from olefin and aromatic petrochemicals. This business bears characteristics of a large-volume process industry. The Group's major products are PE, PP, BPA, ABS, EP, PVC, plasticizers, acrylic, SAP, synthetic rubber, a special resin, and others.

LG Energy Solution, Ltd. which was established through the split-off of Energy solution business from the Parent Company on December 1, 2020, and its subsidiaries mainly manufacture and supply batteries ranging from IT & New application batteries for mobile phones and laptop computers to automotive batteries for electric vehicles and ESS (Energy Storage System) batteries. Demand for small-sized batteries for new applications, such as electric tools and electric driving devices, as well as traditional IT devices, has been increasing recently, and the automotive battery business is also expected to expand rapidly due to an increasing demand for the batteries in associated with enhanced environment regulation in developed countries. Demand for ESS is expanding with an increasing importance of efficient usage of electricity and generation of renewable energy.

The Advanced material business manufactures and supplies various kinds of IT materials, such as automotive materials, OLED films, semiconductor materials, OLED materials, battery materials and others and RO membranes, which will be the next growth engine for future.

The Life Sciences business manufactures and supplies pharmaceutical products, such as human growth hormone 'Eutropin,' diabetes drug 'Zemiglo,' bovine somatotropin 'Boostin,' hyaluronic acid

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filler 'YVOIRE' and others, as well as fine chemical products, such as herbicide 'PYANCHOR' for rice farming and others.

FarmHannong Co., Ltd. and its subsidiaries, which were acquired by the Group in 2016, manufacture and sell crop protection products, seeds, fertilizers and others. The crop protection business provides high-value products such as environmentally friendly pesticides. The fertilizer business leads to developing the next generation of fertilizers, such as eco-friendly organic and functional fertilizers and potting soil. The seed business puts a priority on retaining various genetic resources and developing rare breeds with high profits in order to remain competitive in the future food industry.

1.3 Consolidated Subsidiaries, Associates and Joint Ventures

	Percentage of controlling interests (%)		Business location	Closing month	Business activities
	December 31, 2023	December 31, 2022			
Consolidated subsidiaries					
LG Energy Solution, Ltd. ¹	82	82	Korea	December	Battery manufacturing and sales
Ningbo LG Yongxing Chemical Co., Ltd. ²	75	75	China	December	ABS/SBL manufacturing and sales
Ningbo Zhenhai LG Yongxing Trade Co., Ltd. ²	75	75	China	December	ABS sales
LG Chem America, Inc	100	100	USA	December	Sales and trading
LG Chemical India Pvt. Ltd. ^{3,5}	100	100	India	December	Synthetic resin manufacturing and sales
LG Polymers India Pvt. Ltd. ^{3,5}	100	100	India	December	PS manufacturing and sales
LG Chemical (Guangzhou) Engineering Plastics Co., Ltd.	100	100	China	December	EP manufacturing and sales
LG Chem (Taiwan), Ltd.	100	100	Taiwan	December	Polarizer manufacturing and sales
Tianjin LG Bohai Chemical Co., Ltd.	75	75	China	December	PVC, VCM and EDC manufacturing and sales
Tianjin LG BOTIAN Chemical Co., Ltd.	58	58	China	December	SBS manufacturing and sales
LG Chem (China) Investment Co., Ltd. ⁴	100	100	China	December	China holding company
LG Chem (Tianjin) Engineering Plastics Co., Ltd.	100	100	China	December	EP manufacturing and sales
LG Chem Europe GmbH	100	100	Germany	December	Sales and trading
LG Chem Poland Sp. z o.o.	100	100	Poland	December	EP manufacturing and sales
LGC Petrochemical India Private Ltd.	100	100	India	December	Synthetic resin manufacturing and sales
HAENGBOKNURI CO., Ltd.	100	100	Korea	December	Facility management and general cleaning
LG CHEM TK Kimya SANAYI VE TIC. Ltd. STI.	100	100	Turkey	December	Sales and trading
LG Chem Japan Co., Ltd.	100	100	Japan	December	Sales and trading
LG NanoH2O, LLC	100	100	USA	December	Water processing membrane sales
LG Chem (Chongqing) Engineering Plastics Co., Ltd.	100	100	China	December	EP manufacturing and sales
LG Chem (HUIZHOU) Petrochemical Co., Ltd.	70	70	China	December	ABS manufacturing and sales
LG Chem Life Sciences India Pvt. Ltd.	100	100	India	December	Pharmaceutical products sales
LG Jiansheng Chem Life Sciences (Beijing) Co., Ltd.	60	60	China	December	Pharmaceutical products sales
LG Chem Life Sciences (Thailand) Ltd.	100	100	Thailand	December	Pharmaceutical products sales
LG Chem Hai Phong Vietnam Co., Ltd.	100	100	Vietnam	December	Polarizer manufacturing and sales
LG Chem Mexico S.A. de C.V.	100	100	Mexico	December	Sales and trading
LG Chem Hai Phong engineering Plastics LLC.	100	100	Vietnam	December	EP manufacturing and sales
LG Chem (Guangzhou) Information & Electronics Materials Co., Ltd.	100	100	China	December	Polarizer manufacturing and sales
LEYOU NEW ENERGY MATERIALS (WUXI) Co., Ltd.	51	51	China	December	Cathode materials manufacturing and sales
LG Chem Fund I LLC ⁶	100	100	USA	December	Investments in venture companies
Uniseal, Inc.	100	100	USA	December	Adhesive manufacturing and sales

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	Percentage of controlling interests (%)		Business location	Closing month	Business activities
	December 31, 2023	December 31, 2022			
LG Chem Life Science Innovation Center, Inc. ⁷	100	100	USA	December	Pharmaceutical products research
LG Chem Asia Pte. Ltd.	100	100	Singapore	December	Asia BSC
LG Chem China Tech Center ⁴	100	100	China	December	Research on petrochemicals
LG PETRONAS CHEMICALS Malaysia SDN.BHD.	51	51	Malaysia	December	NBL manufacturing and sales
LG Chem Hangzhou Advanced Materials Co., Ltd. ⁸	70	70	China	December	Polarizer sheet manufacturing and sales
LG-HY BCM Co., Ltd. ⁹	51	100	Korea	December	Cathode materials manufacturing and sales
LG Chem Ohio Petrochemical, Inc.	100	100	USA	December	ABS manufacturing and sales
LG Chem VietNam Co., Ltd.	100	100	Vietnam	December	Sales and trading
LG Chem Malaysia SDN.BHD.	100	100	Malaysia	December	Sales and trading
LG Chem BRASIL INTERMEDIACAO DE NEGOCIOS DO SETOR QUIMICO LTDA.	100	100	Brazil	December	Sales and trading
Aveo Pharmaceuticals, Inc. ⁷	100	-	USA	December	Anticancer drug sales and research
PT LG CHEM INDONESIA ¹⁰	100	-	Indonesia	December	Sales and trading
TW Biomassenergy Co., Ltd ¹¹	60	-	Korea	December	Plant utility manufacturing and sales
FarmHannong Co., Ltd. ¹³	100	100	Korea	December	Agricultural pesticide manufacturing and sales
Farmhannong America, Inc. ¹³	100	100	USA	December	Agricultural pesticide sales
FarmHannong(Thailand) Ltd. ¹³	100	100	Thailand	December	Research and development ("R&D") on seeds
FARMHANNONG(MALAYSIA) SDN. BHD. ¹³	100	100	Malaysia	December	Agricultural pesticide licensing
PT FARM HANNONG INDONESIA ¹³	100	100	Indonesia	December	Agricultural pesticide licensing
FarmHannong do Brasil Limitada ¹³	100	100	Brazil	December	Agricultural pesticide sales
LG Energy Solution (Nanjing) Co., Ltd. ¹	82	82	China	December	Small-battery manufacturing and sales
LG Energy Solution Michigan Inc. ¹	82	82	USA	December	Automotive battery research and manufacturing
LG Energy Solution Battery (Nanjing) Co., Ltd. ¹	82	82	China	December	Automotive battery manufacturing and sales
LG Energy Solution Wroclaw sp. z o.o. ¹	82	82	Poland	December	Automotive battery manufacturing and sales
LG Energy Solution Australia Pty Ltd ¹	82	82	Australia	December	ESS sales
LG Energy Solution Technology (Nanjing) Co., Ltd. ¹	82	82	China	December	Automotive battery manufacturing and sales
Ultium Cells Holdings LLC ^{1, 15}	41	41	USA	December	Automotive battery manufacturing and sales
Ultium Cells LLC ^{1, 15}	41	41	USA	December	Automotive battery manufacturing and sales
LG Energy Solution Europe GmbH ¹	82	82	Germany	December	ESS sales
LG Energy Solution (Taiwan), Ltd. ¹	82	82	Taiwan	December	Small-storage battery sales
Aremnuri. Co. Ltd ¹	82	82	Korea	December	Facility management and general cleaning
LG Energy Solution Fund I LLC ¹	82	82	USA	December	Investments in venture companies
LG Energy Solution Vertech Inc. ¹	82	82	USA	December	ESS installation service
LG Energy Solution Arizona, Inc ¹	82	82	USA	December	Small-battery manufacturing and sales
Baterias De Castilla, S.L. ¹	82	82	Spain	December	Special purpose company
L-H Battery Company, Inc. ^{1, 16}	42	-	USA	December	Automotive battery manufacturing and sales
LG Energy Solution India Private Limited ¹	82	-	India	December	Small-battery sales
LG Energy Solution Arizona ESS, Inc. ^{1, 17}	82	-	USA	December	ESS Manufacturing and sales
Nextstar Energy Inc. ^{1, 18}	42	-	Canada	December	Automotive battery manufacturing and sales
LG Energy Solution Fund II LLC ¹	82	-	USA	December	Investments in venture companies
HL-GA BATTERY COMPANY LLC ^{1, 19}	41	-	USA	December	Automotive battery manufacturing and sales
Associates					
TECHWIN Co., Ltd.	20	20	Korea	December	Environment solution and construction of chemical plant

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	Percentage of controlling interests (%)		Business location	Closing month	Business activities
	December 31, 2023	December 31, 2022			
LG Chem Life Sciences Poland Ltd.	100	100	Poland	December	Pharmaceutical products sales
HUAJIN NEW ENERGY MATERIALS(QUZHOU)CO., LTD.	49	49	China	December	Battery materials manufacturing and sales
TL Chemical CO., Ltd	40	40	Korea	December	AN manufacturing and sales
KOREA PRECURSOR CO., LTD. ¹²	49	49	Korea	December	Battery materials manufacturing and sales
VINFAST LITHIUM BATTERY PACK LLC. ^{1,20}	-	29	Vietnam	December	Battery manufacturing and sales
Jiangxi VL Battery., Ltd. ^{1,20}	-	28	China	December	Battery manufacturing and sales
Sam-a Aluminium Company, Limited ^{1,21}	8	-	Korea	December	Aluminium sales and manufacturing
NEXPO Co., Ltd ^{1,22}	16	-	Korea	December	Battery products manufacturing and sales
Bricks Capital Management Global Battery Private Equity Fund I ^{1,23}	49	-	Korea	December	Collective investment scheme
Joint ventures¹⁴					
SEETEC Co., Ltd.	50	50	Korea	December	Plant utility and distribution, research assistance service
LG Toray Hungary Battery Separator Kft	50	50	Hungary	December	Battery separator manufacturing and sales
PT.HLI Greenpower Co., Ltd. ¹	41	41	Indonesia	December	Automotive battery manufacturing and sales

¹ During the previous year, LG Energy Solution, Ltd. was listed on Korea Composite Stock Price Index (KOSPI), and its percentage of ownership to LG Energy Solution, Ltd. decreased since the Parent Company sold the shares of LG Energy Solution, Ltd. As of December 31, 2023, LG Energy Solution, Ltd. owns shares in subsidiaries, associates and joint ventures, such as LG Energy Solution (Nanjing) Co., Ltd. and others, and the Group has stated the shares of those companies as effective share ratio.

² As of December 31, 2023, Ningbo LG Yongxing Chemical Co., Ltd. owns 100% of Ningbo Zhenhai LG Yongxing Trading Co., Ltd.'s shares.

³ As of December 31, 2023, LG Chemical India Pvt. Ltd. owns 100% of LG Polymers India Pvt. Ltd.'s shares.

⁴ As of December 31, 2023, LG Chem (China) Investment Co., Ltd. owns 100% of LG Chem China Tech Center's shares.

⁵ During the year ended December 31, 2023, LG Chemical India Pvt. Ltd. newly acquired shares of LG Polymers India Pvt. Ltd. for ₩12,390 million.

⁶ During the year ended December 31, 2023, the Group additionally acquired shares of LG CHEM FUND I LLC for ₩8,255 million.

⁷ During the year ended December 31, 2023, LG Chem Life Science Innovation Center, Inc. invested ₩701,103 million for a 100% share in Aveo Pharmaceuticals, Inc.

⁸ During the year ended December 31, 2023, the Group reclassified the shares of LG Chem Hangzhou Advanced Materials Co., Ltd. amounting to ₩11,712 million as assets held for sale.

⁹ During the year ended December 31, 2023, the Group additionally acquired shares of LG BCM for ₩80,257 million. Meanwhile, the percentage of ownership has been reduced due to paid-in capital increase with allotment to the third party, and the company's name was changed to LG-HY BCM Co., Ltd.

¹⁰ During the year ended December 31, 2023, the Group invested ₩886 million for a 100% share in PT LG CHEM INDONESIA.

¹¹ During the year ended December 31, 2023, the Group invested ₩26,400 million for a 60% share in TW Biomassenergy Co., Ltd.

¹² During the year ended December 31, 2023, the Group additionally acquired shares of KOREA PRECURSOR CO., LTD. for ₩30,576 million.

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- ¹³ As of December 31, 2023, FarmHannong Co., Ltd. owns 100% of Farmhannong America, Inc., FarmHannong(Thailand) Ltd., FARMHANNONG(MALAYSIA) SDN.BHD., PT FARM HANNONG INDONESIA and FarmHannong do Brasil Limitada's shares.
- ¹⁴ All joint arrangements over which the Group has joint control are classified as a joint venture since the joint arrangements are structured through a separate vehicle and the parties have rights to the net assets of the arrangement.
- ¹⁵ During the year ended December 31, 2022, LG Energy Solution, Ltd. acquired 50% shares of Ultium Cells Holdings LLC through the investment in kind with 100% shares of Ultium Cells LLC. Although the Group has less than a majority ownership interest in Ultium Cells Holdings LLC and Ultium Cells LLC, it is considered to have control over Ultium Cells Holdings LLC and Ultium Cells LLC as the Group can exercise the majority voting rights in its decision-making process and has the ability to use power to affect the returns of the investee through its involvement in the production and cost management and other activities in accordance with the shareholders' agreement.
- ¹⁶ During the year ended December 31, 2023, L-H Battery Company, Inc. was established and LG Energy Solution has newly acquired a 51% interest for ₩548,958 million.
- ¹⁷ During the year ended December 31, 2023, LG Energy Solution Arizona ESS, Inc. was established and LG Energy Solution has newly acquired a 100% interest for ₩39,936 million.
- ¹⁸ During the year ended December 31, 2023, Nextstar Energy Inc. was established and LG Energy Solution has newly acquired a 51% interest for ₩579,075 million.
- ¹⁹ During the year ended December 31, 2023, HL-GA Battery Company LLC was established and LG Energy Solution has newly acquired a 50% interest for ₩143,198 million. Although the Group has less than a majority ownership interest in HL-GA Battery Company LLC, it is considered to have control over HL-GA Battery Company LLC as the Group can exercise the majority voting rights in its decision-making process and has the ability to use power to affect the returns of the investee through its involvement in the production and cost management and other activities in accordance with the shareholders' agreement.
- ²⁰ During the year ended December 31, 2023, LG Energy Solution, Ltd. disposed 100% ownership interest of VINFAST LITHIUM BATTERY PACK LLC and Jiangxi VL Battery., Ltd.
- ²¹ During the year ended December 31, 2023, LG Energy Solution, Ltd. newly acquired 10% shares of Sam-a Aluminum Company, Limited for ₩46,575 million. Although the ownership interest in Sam-a Aluminum Company, Limited. is less than 20%, the Group can exercise the majority voting rights in its decision-making process in accordance with the shareholders' agreement. Therefore, it is judged to have a significant influence.
- ²² During the year ended December 31, 2023, LG Energy Solution, Ltd. newly acquired 19% shares of NEXPO Co., Ltd for ₩2,375 million. Although the ownership interest in NEXPO Co., Ltd. is less than 20%, the Group can exercise the majority voting rights in its decision-making process in accordance with the shareholders' agreement. Therefore, it is judged to have a significant influence.
- ²³ During the year ended December 31, 2023, Bricks Capital Management Global Battery No. 1 Private Equity Limited Partnership Company was established, and LG Energy Solution, Ltd. newly acquired 59.9% interests of Bricks Capital Management Global Battery No. 1 Private Equity Limited Partnership Company for ₩13,381 million. Although the ownership interest in Bricks Capital Management Global Battery No. 1 Private Equity Limited Partnership Company is 59.9%, It was classified as a Joint venture in accordance with the existence of virtually unanimous provisions, etc., in the agreement.

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1.4 Summarized Financial Information of Subsidiaries, Associates and Joint Ventures

Summarized financial information (before elimination of intercompany transactions and adjustments for differences in accounting policies) of subsidiaries, associates and joint ventures is as follows:

	December 31, 2023			2023	
	Assets	Liabilities	Equity	Revenue	Profit (loss) for the year
Subsidiaries					
LG Energy Solution, Ltd. and its subsidiaries ¹	45,437,144	21,063,635	24,373,509	33,745,470	1,637,985
Ningbo LG Yongxing Chemical Co., Ltd.	871,412	100,981	770,431	1,835,664	38,880
Ningbo Zhenhai LG Yongxing Trade Co., Ltd.	7,386	740	6,646	17,699	333
LG Chem America, Inc.	434,610	378,456	56,154	976,325	6,295
LG Chemical India Pvt. Ltd.	62,922	10	62,912	-	69
LG Polymers India Pvt. Ltd.	86,171	61,485	24,686	(21)	(8,388)
LG Chemical (Guangzhou) Engineering Plastics Co., Ltd.	102,037	20,594	81,443	179,284	12,413
LG Chem (Taiwan), Ltd. ^{4,5}	67,658	48,189	19,469	31,863	5,109
Tianjin LG Bohai Chemical Co., Ltd.	466,008	88,133	377,875	518,751	4,238
Tianjin LG BOTIAN Chemical Co., Ltd.	44,296	15,780	28,516	142,405	966
LG Chem (China) Investment Co., Ltd.	1,387,487	1,001,737	385,750	85,892	14,874
LG Chem (Tianjin) Engineering Plastics Co., Ltd.	60,967	12,072	48,895	75,403	7,709
LG Chem Europe GmbH	386,690	278,083	108,607	888,172	14,133
LG Chem Poland Sp. z o.o.	261,741	125,972	135,769	386,703	26,267
LGC Petrochemical India Private Ltd.	6,466	1,166	5,300	6,616	763
HAENGBOKNURI CO., LTD.	4,858	1,792	3,066	10,068	170
LG CHEM TK Kimya SANAYI VE TIC. Ltd. STI.	10,797	11,426	(629)	80,466	(1,783)
LG Chem Japan Co., Ltd.	7,691	3,087	4,604	6,292	725
LG NanoH2O, LLC	62,932	16,219	46,713	63,217	7,636
LG Chem (Chongqing) Engineering Plastics Co., Ltd.	57,450	12,705	44,745	76,217	9,303
LG Chem(HUIZHOU) Petrochemical Co., Ltd.	459,028	101,150	357,878	746,025	(33,758)
LG Chem Life Sciences India Pvt. Ltd.	1,322	200	1,122	590	132
LG Jiansheng Life Sciences (Beijing) Co., Ltd.	15,549	15,781	(232)	37,011	850
LG Chem Life Sciences (Thailand) Ltd.	34,623	15,492	19,131	53,767	2,094
LG Chem Hai Phong Vietnam Company Ltd. ⁵	12,742	452	12,290	-	713
LG Chem Mexico S.A. de C.V.	5,024	2,503	2,521	4,821	558
LG Chem Hai Phong Engineering Plastics Ltd.	29,400	6,190	23,210	45,023	6,279
LG Chem (Guangzhou) Information & Electronics Materials Co., Ltd. ⁵	289,005	77,019	211,986	77,705	5,976
LEYOU NEW ENERGY MATERIALS(WUXI) Co., LTD.	925,512	196,414	729,098	1,772,625	157,607
LG Chem Fund I LLC	117,218	20	117,198	-	(5,919)
Uniseal, Inc.	63,565	10,280	53,285	107,235	14,337
LG Chem Life Science Innovation Center, Inc.	51,860	27,949	23,911	14,663	3,105
LG Chem Asia Pte. Ltd.	48,912	47,423	1,489	5,293	130
LG Chem China Tech Center	35,474	1,581	33,893	10,271	225
LG PETRONAS CHEMICALS Malaysia Sdn.Bhd.	299,439	246,746	52,693	220	(15,379)
LG Chem Hangzhou Advanced Materials Co., Ltd. ^{5,6}	37,186	13,394	23,792	-	(7,409)
LG-HY BCM Co., Ltd.	606,980	352,275	254,705	626	(3,254)
LG Chem Ohio Petrochemical, Inc.	63,361	40,551	22,810	-	(1,470)
LG Chem VietNam Co., Ltd	798	209	589	1,221	142
LG Chem Malaysia SDN.BHD.	1,138	360	778	2,080	154

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LG Chem BRASIL INTERMEDIACAO DE NEGOCIOS DO SETOR QUIMICO LTDA.	1,919	473	1,446	3,214	143
Aveo Pharmaceuticals, Inc. ²	64,178	77,559	(13,381)	200,439	(18,071)
PT LG CHEM INDONESIA ²	1,567	597	970	1,286	138
TW Biomassenergy Co., Ltd. ²	65,795	22,063	43,732	-	(250)
FarmHannong Co., Ltd. and its subsidiaries ¹	1,089,439	653,756	435,683	782,394	(2,602)
Associates					
TECHWIN Co., Ltd.	134,385	56,367	78,018	125,314	(3,150)
LG Life Sciences Poland Ltd.	297	99	198	184	8
KOREA PRECURSOR CO., LTD.	182,008	84,859	97,149	-	(5,242)
HUAJIN NEW ENERGY MATERIALS(QUZHOU)CO., LTD.	478,745	314,971	163,774	796,960	79
TL Chemical CO., Ltd	123,007	-	123,007	-	3,464
Sam-a Aluminium Company, Limited ²	404,364	152,093	252,271	268,150	(248)
NEXPO Co., Ltd ²	12,254	749	11,505	885	(996)
Bricks Capital Management Global Battery Private Equity Fund I ²	21,571	20	21,551	-	(898)
Joint ventures					
SEETEC Co., Ltd.	348,415	65,179	283,236	822,873	18,353
LG Toray Hungary Battery Separator Kft.	786,743	9,815	776,928	30,465	(14,048)
PT.HLI Green Power	1,195,064	760,456	434,608	5,642	(15,429)

(in millions of Korean won)

	December 31, 2022			2022	
	Assets	Liabilities	Equity	Revenue	Profit (loss) for the year
Subsidiaries					
LG Energy Solution, Ltd. and its subsidiaries ¹	38,299,445	17,705,683	20,593,762	25,598,609	779,826
Ningbo LG Yongxing Chemical Co., Ltd.	977,939	216,923	761,016	2,251,738	145,923
Ningbo Zhenhai LG Yongxing Trade Co., Ltd.	6,547	208	6,339	26,604	468
LG Chem America, Inc.	364,217	315,018	49,199	1,322,816	4,068
LG Chemical India Pvt. Ltd.	63,069	76	62,993	-	(106)
LG Polymers India Pvt. Ltd.	56,108	36,817	19,291	2,111	(5,526)
LG Chemical (Guangzhou) Engineering Plastics Co., Ltd.	103,121	31,869	71,252	219,333	3,696
LG Chem (Taiwan), Ltd. ^{4,5}	66,276	16,344	49,932	27,529	38,101
Tianjin LG Bohai Chemical Co., Ltd.	506,683	91,577	415,106	650,225	62,608
Tianjin LG BOTIAN Chemical Co., Ltd.	52,147	21,909	30,238	166,797	4,523
LG Chem (China) Investment Co., Ltd.	965,394	595,580	369,814	84,078	15,145
LG Chem (Tianjin) Engineering Plastics Co., Ltd.	54,521	7,617	46,904	79,150	4,902
LG Chem Europe GmbH	416,423	327,179	89,244	1,046,360	19,292
LG Chem Poland Sp. z o.o.	251,051	156,649	94,402	361,120	7,378
LGC Petrochemical India Private Ltd.	5,708	1,208	4,500	6,528	777
HAENGBOKNURI CO., LTD.	4,484	1,588	2,896	9,318	(223)
LG CHEM TK Kimya SANAYI VE TIC. Ltd. STI.	10,320	9,973	347	86,557	342
LG Chem Japan Co., Ltd.	5,074	1,012	4,062	5,599	649
LG NanoH2O, LLC	59,062	20,546	38,516	70,338	7,046
LG Chem (Chongqing) Engineering Plastics Co., Ltd.	45,022	9,280	35,742	72,183	2,883
LG Chem(HUIZHOU) Petrochemical Co., Ltd.	545,010	116,473	428,537	976,950	20,502
LG Chem Life Sciences India Pvt. Ltd.	2,015	1,034	981	5,749	64
LG Jiansheng Life Sciences (Beijing) Co., Ltd.	16,953	17,949	(996)	37,635	(6,227)
LG Chem Life Sciences (Thailand) Ltd.	31,712	15,120	16,592	43,675	1,313
LG Chem Hai Phong Vietnam Company Ltd. ⁵	16,224	4,505	11,719	-	1,392
LG Chem Mexico S.A. de C.V.	3,811	1,877	1,934	3,422	503
LG Chem Hai Phong Engineering Plastics Ltd.	33,254	15,968	17,286	36,492	1,023

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LG Chem (Guangzhou) Information & Electronics Materials Co., Ltd. ⁵	281,292	72,768	208,524	42,850	5,480
LEYOU NEW ENERGY MATERIALS(WUXI) Co., LTD.	1,308,350	640,026	668,324	2,173,454	325,087
LG Chem Fund I LLC	77,965	20	77,945	-	(3,228)
Uniseal, Inc.	47,936	9,428	38,508	94,377	4,901
LG Chem Life Science Innovation Center, Inc.	21,438	1,477	19,961	8,906	1,054
LG Chem Asia Pte. Ltd.	47,745	46,430	1,315	4,259	415
LG Chem China Tech Center	37,725	3,941	33,784	5,727	763
Shanjin Optoelectronics (Taiwan) Co., Ltd. ^{3,4}	-	-	-	-	56
LG PETRONAS CHEMICALS Malaysia Sdn.Bhd.	204,444	134,990	69,454	-	(3,899)
LG Chem Hangzhou Advanced Materials Co., Ltd. ^{5,6}	46,375	15,645	30,730	-	(2,446)
LG BCM	175,519	125,909	49,610	-	(3,203)
LG Chem Ohio Petrochemical, Inc.	23,842	15	23,827	-	(307)
LG Chem VietNam Co., Ltd	747	291	456	1,058	96
LG Chem Malaysia SDN.BHD.	1,043	399	644	1,916	120
LG Chem BRASIL INTERMEDIACAO DE NEGOCIOS DO SETOR QUIMICO LTDA.	1,287	107	1,180	2,844	510
FarmHannong Co., Ltd. and its subsidiaries ¹	1,120,997	682,253	438,744	792,708	46,626
Associates					
TECHWIN Co., Ltd.	137,123	58,470	78,653	90,965	(12,247)
LG Life Sciences Poland Ltd.	235	69	166	171	50
KOREA PRECURSOR CO., LTD. ²	47,838	7,352	40,486	-	(901)
HUAJIN NEW ENERGY MATERIALS(QUZHOU)CO., LTD.	459,440	292,204	167,236	608,925	(16,553)
TL Chemical CO., Ltd	118,942	155	118,787	-	(2,350)
VINFAST LITHIUM BATTERY PACK LLC.	13,297	5,888	7,409	11,072	(3,809)
Jiangxi VL Battery., Ltd.	82,311	43,170	39,141	2,670	(19,851)
Joint ventures					
VINA Plasticizer Chemical Co., Ltd. ⁷	88,554	57,091	31,463	99,578	3,882
SEETEC Co., Ltd.	338,100	61,274	276,826	713,347	9,866
LG Toray Hungary Battery Separator Kft. ²	751,781	2,472	749,309	44	(8,600)
PT.HLI Green Power	667,930	227,305	440,625	-	(10,855)

¹ The information is represented on the basis of the consolidated financial information.

² The information of revenue and profit or loss for the period represents the financial performance after the acquisition of shares.

³ The entities were disposed during the previous year, and the information of revenue and profit or loss for the period represents the financial performance before the disposal.

⁴ LCD polarizer business, etc., of these entities were classified as discontinued operations and profit or loss from the business was included in profit from discontinued operations.

⁵ Polarizer and related material business of these entities was classified as discontinued operations and profit or loss from the business was included in profit from discontinued operations.

⁶ Reclassified to the assets held for sale during the year ended December 31, 2023.

⁷ Reclassified to the assets held for sale during the previous year, and revenue and profit or loss for the year presented are the financial performances before the reclassification. During the current period, the Group disposed 100% ownership interest.

1.5 Information of Non-Controlling Interests that are Material to the Group

(a) LG Energy Solution, Ltd. and its subsidiaries

- Percentage of ownership held by non-controlling interests and accumulated non-controlling interests

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<i>(In millions of Korean won)</i>	December 31, 2023	December 31, 2022
Percentage of ownership held by non-controlling interests	18.2%	18.2%
Accumulated non-controlling interests	8,038,742	5,263,729
- Profit and dividends attributable to non-controlling interests for the years ended December 31, 2023 and 2022, are as follows:		
<i>(In millions of Korean won)</i>	2023	2022
Profit allocated to non-controlling interests	625,148	150,935
Dividends paid to non-controlling interests	197,355	-
- Summarized condensed consolidated interim statements of financial positions of subsidiaries with material non-controlling interests are as follows (before elimination of intercompany transactions):		
<i>(In millions of Korean won)</i>	December 31, 2023	December 31, 2022
Current assets	17,208,396	18,804,269
Non-current assets	28,228,748	19,495,176
Total assets	45,437,144	38,299,445
Current liabilities	10,937,185	11,444,923
Non-current liabilities	10,126,450	6,260,760
Total liabilities	21,063,635	17,705,683
Total equity	24,373,509	20,593,762
- Summarized condensed consolidated interim statements of comprehensive income of subsidiaries with material non-controlling interests for the years ended December 31, 2023 and 2022, are as follows (before elimination of intercompany transaction):		
<i>(In millions of Korean won)</i>	2023	2022
Revenue	33,745,470	25,598,609
Profit for the period	1,637,985	779,826
Total comprehensive income	1,911,128	752,377
- Summarized condensed consolidated interim statements of cash flows of subsidiaries with material non-controlling interests for the years ended December 31, 2023 and 2022, are as follows (before elimination of intercompany transaction):		
<i>(In millions of Korean won)</i>	2023	2022

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Cash flows from operating activities	4,444,179	(579,807)
Cash flows from investing activities	(9,719,327)	(6,259,356)
Cash flows from financing activities	4,354,690	11,414,617
Net (decrease) increase in cash and cash equivalents	(920,458)	4,575,454
Cash and cash equivalents at the beginning of period	5,937,967	1,282,880
Effects of exchange rate changes on cash and cash equivalents	51,274	79,633
Cash and cash equivalents at the end of period	5,068,783	5,937,967

1.6 Changes in Scope for Consolidation

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

Subsidiary	Remark
Aveo Pharmaceuticals. Inc.	Newly acquired
L-H Battery Company, Inc.	Newly established
PT LG CHEM INDONESIA	Newly established
TW Biomassenergy Co., Ltd	Newly established
LG Energy Solution India Private Limited	Newly established
LG Energy Solution Arizona ESS, INC.	Newly established
Nextstar Energy Inc.	Newly established
LG Energy Solution Fund II LLC	Newly established
HL-GA BATTERY COMPANY LLC	Newly established

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES:

The principal accounting policies applied in the preparation of these consolidated financial statements are set out below. These policies have been consistently applied to all the years presented, unless otherwise stated.

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.

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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 classes of property, plant and equipment and investment property – measured at fair value
- Assets held for sale – measured at fair value less costs to sell
- 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 judgment 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 4.

2.2 Changes in Accounting Policies and Disclosures

(a) New and amended standard adopted by the Group

The Company has applied the following standards and amendments for the first time for their annual reporting period commencing January 1, 2023.

-K-IFRS 1001 Presentation of Financial Statements and IFRS Practice Statement 2 Making Materiality Judgements – Disclosure of Accounting Policies (Amendments)

The amendments change the requirements in K-IFRS 1001 with regard to disclosure of accounting policies. The amendments replace all instances of the term 'significant accounting policies' with 'material accounting policy information.' Accounting policy information is material if, when considered together with other information included in an entity's financial statements, it can reasonably be expected to influence decisions that the primary users of general-purpose financial statements make on the basis of those financial statements.

The supporting paragraphs in K-IFRS 1001 are also amended to clarify that accounting policy information that relates to immaterial transactions, other events or conditions is immaterial and need not be disclosed. Accounting policy information may be material because of the nature of the related transactions, other events or conditions, even if the amounts are immaterial. However, not all accounting policy information relating to material transactions, other events or conditions is itself material.

The International Accounting Standards Board IASB has also developed guidance and examples to explain and demonstrate the application of the 'four-step materiality process' described in IFRS Practice Statement 2.

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-K-IFRS 1001 Presentation of Financial Statements – Disclosure of financial liabilities with clauses to adjust exercise price (Amendments)

The amendments require disclosure of valuation gains or losses (limited to those recognized in the profit or loss) of the conversion options or warrants (or financial liabilities including them), if all or part of the financial instrument with exercise price that is adjusted depending on the issuer's share price change is classified as financial liability as defined in paragraph 11 (2) of K-IFRS 1032.

-K-IFRS 1008 Accounting Policies, Changes in Accounting Estimates and Errors – Definition of Accounting Estimates (Amendments)

The amendments replace the definition of a change in accounting estimates with a definition of accounting estimates. Under the new definition, accounting estimates are “monetary amounts in separate financial statements that are subject to measurement uncertainty,” The definition of a change in accounting estimates was deleted.

-K-IFRS 1012 Income Taxes - Deferred Tax related to Assets and Liabilities arising from a Single Transaction (Amendments)

The amendments introduce a further exception from the initial recognition exemption. Under the amendments, an entity does not apply the initial recognition exemption for transactions that give rise to equal taxable and deductible temporary differences. Depending on the applicable tax law, equal taxable and deductible temporary differences may arise on initial recognition of an asset and liability in a transaction that is not a business combination and affects neither accounting profit nor taxable profit.

Following the amendments to K-IFRS 1012, an entity is required to recognize the related deferred tax asset and liability, with the recognition of any deferred tax asset being subject to the recoverability criteria in K-IFRS 1012.

-K-IFRS 1012 Income Taxes - International Tax Reform—Pillar Two Model Rules (Amendments)

The amendments clarify that the Standard applies to income taxes arising from tax law enacted or substantively enacted to implement the Pillar Two model rules published by the OECD, including tax law that implements qualified domestic minimum top-up taxes described in those rules.

The amendments introduce a temporary exception to the accounting requirements for deferred taxes in K-IFRS 1012, so that an entity would neither recognize nor disclose information about deferred tax assets and liabilities related to Pillar Two income taxes.

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

- K-IFRS 1001 Presentation of Financial Statements – Non-current Liabilities with Covenants (Amendments)

The amendments specify that only covenants that an entity is required to comply with on or before the end of the reporting period affect the entity's right to defer settlement of a liability for at least 12 months after the reporting date. Such covenants affect whether the right exists at the end of the reporting period, even if compliance with the covenant is assessed only after the reporting date.

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The amendments also specify that the right to defer settlement of a liability for at least 12 months after the reporting date is not affected if an entity only has to comply with a covenant after the reporting period. However, if the entity's right to defer settlement of a liability is subject to the entity complying with covenants within 12 months after the reporting period, an entity discloses information that enables users of financial statements to understand the risk of the liabilities becoming repayable within 12 months after the reporting period. This would include information about the covenants (including the nature of the covenants and when the entity is required to comply with them), the carrying amount of related liabilities and facts and circumstances, if any, that indicate that the entity may have difficulties complying with the covenants.

- K-IFRS 1001 Presentation of Financial Statements - Classification of Liabilities as Current or Non-current (Amendments)

The amendments clarify that the classification of liabilities as current or non-current is based on rights that are in existence at the end of the reporting period, specify that classification is unaffected by expectations about whether an entity will exercise its right to defer settlement of a liability, explain that rights are in existence if covenants are complied with at the end of the reporting period and introduce a definition of 'settlement' to make clear that settlement refers to the transfer to the counterparty of cash, equity instruments, other assets or services.

The Company has decided to earlier application, judging that the impact of the above amendments is significant to the Company's separate financial statements. Accordingly, the Company's separate financial statements have been prepared in accordance with the early adoption of the above enactment and amendment.

(b) New standards and interpretations not yet adopted by the Group

The following new and amended accounting standards have been published that are not mandatory for December 31, 2023, reporting periods and have not been early adopted by the Company.

- K-IFRS 1007 Statement of Cash Flows and K-IFRS 1107 Financial Instruments: Disclosures - Supplier Finance Arrangements (Amendments)

The amendments add a disclosure objective to K-IFRS 1007 stating that an entity is required to disclose information about its supplier finance arrangements that enables users of financial statements to assess the effects of those arrangements on the entity's liabilities and cash flows. In addition, K-IFRS 1117 was amended to add supplier finance arrangements as an example within the requirements to disclose information about an entity's exposure to concentration of liquidity risk.

The term 'supplier finance arrangements' is not defined. Instead, the amendments describe the characteristics of an arrangement for which an entity would be required to provide the information.

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To meet the disclosure objective, an entity will be required to disclose in aggregate for its supplier finance arrangements:

- The terms and conditions of the arrangements
- The carrying amount, and associated line items presented in the entity's statement of financial position, of the liabilities that are part of the arrangements
- The carrying amount and associated line items for which the suppliers have already received payment from the finance providers
- Ranges of payment due dates for both those financial liabilities that are part of a supplier finance arrangement and comparable trade payables that are not part of a supplier finance arrangement
- Liquidity risk information

- K-IFRS 1116 Leases - Lease Liability in a Sale and Leaseback (Amendments)

The amendments to K-IFRS 1116 add subsequent measurement requirements for sale and leaseback transactions that satisfy the requirements in K-IFRS 1115 to be accounted for as a sale. The amendments require the seller-lessee to determine 'lease payments' or 'revised lease payments' such that the seller-lessee does not recognise a gain or loss that relates to the right of use retained by the seller-lessee, after the commencement date.

- K-IFRS 1001 Presentation of Financial Statements – Disclosure of Virtual Assets (Amendments)

The amendments to K-IFRS 1001 add additional disclosure requirements required by other standards for transactions related to virtual assets, setting out disclosure requirement for each case of 1) holding virtual assets, 2) holding virtual assets on behalf of customer and 3) issuing virtual assets.

When holding a virtual asset, disclosure on the general information about virtual assets, the accounting policy applied and each virtual asset's acquisition method, cost and the fair value at the end of the reporting period is required. Also, when issuing a virtual asset, the entity's obligations and status of fulfilment of the obligation related to the issued virtual asset, the timing and amount of the recognized revenue of the sold virtual asset, the number of virtual assets held after issuance and important contract details shall be disclosed.

The amendments are effective for annual reporting periods beginning on or after January 1, 2024. Earlier application is permitted.

The Company does not expect that these amendments have a significant impact on the separate financial statements.

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2.3 Consolidation

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

(a) Subsidiaries

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

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

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

Intercompany transactions, balances and unrealized gains on transactions between group companies are eliminated. If a member of the Group uses accounting policies other than those adopted in the consolidated financial statements for like transactions and events in similar circumstances, appropriate adjustments are made to that group member's financial statements in preparing the consolidated financial statements to ensure conformity with the group's accounting policies.

For transactions with non-controlling interests that do not result in a loss of control, any difference between the amount by which the non-controlling interests are adjusted and the fair value of the consideration paid or received is recognized in equity attributable to the owners of the Parent.

When the Group loses control in a subsidiary, any retained interest in the subsidiary is remeasured at its fair value and resulting gain or loss is recognized in profit or loss.

(b) Associates

Associates are entities over which the Group has significant influence but not control or joint control. Investments in associates are accounted for using the equity method of accounting, after initially being recognized at cost. Unrealized gains on transactions between the Group and its associates are eliminated to the extent of the Group's interest in the associates. If the Group's share of losses of an associate equals or exceeds its interest in the associate (including long-term interests that, in substance, form part of the Group's net investment in the associate), the Group discontinues recognizing its share of further losses. After the Group's interest is reduced to zero, additional losses are provided for, and a liability is recognized, only to the extent that the Group has incurred legal or constructive obligations or made payments on behalf of the associate. If there

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is 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.

(c) Joint Arrangements

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

2.4 Foreign Currency Translation

(a) Functional and presentation currency

Items included in the consolidated 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.

(b) 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, such as borrowings and others, are generally recognized in profit or loss. They are recognized in other comprehensive income if they relate to qualifying cash flow hedges, qualifying effective portion of net investment hedges, or are attributable to monetary part of the net investment in a foreign operation.

Foreign exchange gains and losses related to borrowings are presented as finance cost in the consolidated statements of profit or loss.

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.

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(c) Translation into 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:

- i) assets and liabilities for each statement of financial position presented are translated at the closing rate at the end of the reporting period;
- ii) income and expenses for each statement of income are translated at monthly average exchange rates;
- iii) equity is translated at the historical exchange rate; and
- iv) all resulting exchange differences are recognized in other comprehensive income.

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

2.5 Cash and Cash Equivalents

Cash and cash equivalents include cash in hand, deposits held at calls with banks, other short-term highly liquid investments with original maturities of three months or less.

2.6 Financial Assets

(a) Classification

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

- Those to be measured at fair value through profit or loss
- Those to be measured at fair value through other comprehensive income
- Those to be measured at amortized cost

Financial assets are classified on the basis of the Group's business model for managing the financial assets and the contractual cash flow characteristics of the financial assets.

Gains and losses on financial assets measured at fair value are recognized either 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 may make an irrevocable election at the time of initial recognition to account for the equity investment at fair value through other comprehensive income. Changes in fair value of non-designated equity investment are recognized in profit or loss.

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(b) 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.

A. 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:

- **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. A gain or loss on a debt investment that is subsequently measured at amortized cost and is not part of a hedging relationship is recognized in profit or loss when the asset is derecognized or impaired. Interest income from these financial assets is included in 'finance income' using the effective interest rate method.
- **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. Movements in the carrying amount are taken through other comprehensive income, except for the recognition of impairment loss (reversal of impairment loss), interest income and foreign exchange gains and losses, which are recognized in profit or loss. When the financial asset is derecognized, the cumulative gain or loss previously recognized in other comprehensive income is reclassified from equity to profit or loss. Interest income from these financial assets is included in 'finance income' using the effective interest rate method. Foreign exchange gains and losses are presented in 'finance income/costs or other non-operating income/expenses' and impairment losses are presented in 'other non-operating expenses.'
- **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. Changes in the fair value of financial assets at fair value through profit or loss are recognized in 'finance income/costs' in the consolidated statements of profit or loss as applicable and are not part of a hedging relationship.

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B. 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 are 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 continues 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 'finance income/costs' in the consolidated statements 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.

(c) 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, the Group applies the simplified approach, which requires expected lifetime credit losses to be recognized from initial recognition of the receivables.

(d) Recognition and Derecognition

Regular-way purchases and sales of financial assets are recognized or derecognized on trade date, the date on which the Group commits to purchase or sell the asset. Financial assets are derecognized when the rights to receive cash flows from the financial assets have expired or have been transferred and the Group has transferred substantially all the risks and rewards of ownership.

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 consolidated statements of financial position.

2.7 Derivative Financial Instruments

Derivatives are initially recognized at fair value on the date a derivative contract is entered into and are subsequently remeasured to their fair value at the end of each reporting period. The accounting for subsequent changes in fair value depends on whether the derivative is designated as a hedging instrument, and if so, the nature of the item being hedged. Derivatives that do not qualify for hedge accounting are classified for trading purposes, and the changes in the fair value of the derivatives are recognized in profit or loss within 'finance income (costs)' based on the nature of transactions. In addition, the Group designates derivatives contracted for risk hedging purposes as hedging instruments for the following risk hedging relationships.

- 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)
- Hedges of a net investment in a foreign operation (net investment hedges)

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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 a 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 are classified as current or non-current based on their expected maturity and their settlement, respectively.

Cash flow hedge

The effective portion of changes in the fair value of derivatives that are designated and qualify as cash flow hedges are recognized in the cash flow hedge reserve within equity, limited to the cumulative change in fair value (present value) of the hedged item (the present value of the cumulative change in the future expected cash flows of the hedged item) from the inception of the hedge. The ineffective portion is recognized in finance income (costs).

When option contracts are used to hedge forecast transactions, the Group designates only the intrinsic value of the option contract as the hedging instrument. Gains or losses relating to the effective portion of the change in intrinsic value of the option contracts are recognized in the cash flow hedge reserve within equity. The changes in the time value of the options contracts that relate to the hedged item ('aligned time value') are recognized within the costs of hedging in other comprehensive income within equity.

When forward contracts are used to hedge forecast transactions, the Group generally designates only the change in fair value of the forward contract related to the spot element as the hedging instrument. Gains or losses relating to the effective portion of the change in the spot element of the forward contracts are recognized in the cash flow hedge reserve within equity. The change in the forward element of the contract that relates to the hedged item is recognized within other comprehensive income within equity. In some cases, the Group may designate the full change in fair value of the forward contract (including forward points) as the hedging instrument. In such cases, the gains or losses relating to the effective portion of the change in fair value of the entire forward contract are recognized in the cash flow hedge reserve within equity.

Amounts accumulated in equity are reclassified in the periods when the hedged item affects profit or loss, as follows:

- Where the hedged item subsequently results in the recognition of a non-financial asset (such as inventory), both the deferred hedging gains and losses and the deferred time value of the option contracts or deferred forward points, if any, are included within the initial cost of the asset. The deferred amounts are ultimately recognized in profit or loss as the hedged item affects profit or loss (for example through cost of sales).
- The gain or loss relating to the effective portion of the interest rate swaps hedging variable rate borrowings is recognized in profit or loss within 'finance cost' at the same time as the interest expense on the hedged borrowings.

When a hedging instrument expires, or is sold, terminated, exercised or when a hedge no longer meets the criteria for hedge accounting, any accumulated cash flow hedge reserve at that time remains in equity until the forecast transaction occurs, resulting in the recognition of a non-financial asset, such as inventory. When the forecast transaction is no longer expected to occur, the cash flow hedge reserve and deferred costs of hedging that were reported in equity are immediately reclassified to profit or loss.

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Changes in 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.

Embedded derivatives

An embedded derivative is a component of a hybrid contract that also includes a non-derivative host – with the effect that some of the cash flows of the combined instrument vary in a way similar to a stand-alone derivative.

Derivatives embedded in hybrid contracts with a financial asset host within the scope of K-IFRS 1109 are not separated. The entire hybrid contract is classified and subsequently measured as either amortized cost or fair value as appropriate.

Derivatives embedded in hybrid contracts with hosts that are not financial assets within the scope of K-IFRS 1109 (e.g., financial liabilities) are treated as separate derivatives when they meet the definition of a derivative, their risks and characteristics are not closely related to those of the host contracts and the host contracts are not measured at fair value through profit or loss.

An embedded derivative is presented as a non-current asset or non-current liability if the remaining maturity of the hybrid instrument to which the embedded derivative relates is more than 12 months and is not expected to be realized or settled within 12 months.

2.8 Trade Receivables

At initial recognition, trade receivables are measured at the amount of unconditional consideration, unless the trade receivables contain a significant financing component, or are measured at fair value if the trade receivables contain a significant financing component. Trade receivables are subsequently measured at amortized cost using the effective interest method, less loss allowance.

2.9 Inventories

Inventories are stated at the lower of cost and net realizable value. Cost is determined using monthly average cost method, except for goods in transit, which is determined using the specific identification method.

2.10 Assets Held for Sale

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

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2.11 Property, Plant and Equipment

Property, plant and equipment are stated at historical cost, less accumulated depreciation and accumulated impairment losses. Historical cost includes expenditure that is directly attributable to the acquisition of the items.

Depreciation of all property, plant and equipment, except for land, is calculated using the straight-line method to allocate their cost or revalued amounts, net of their residual values, over their estimated useful lives as follows:

	Useful lives
Buildings	25–50 years
Structures	6–50 years
Machinery	4–15 years
Others	1–15 years

The assets' depreciation method, residual values and useful lives are reviewed and adjusted, if appropriate, at the end of each reporting period.

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. An investment property is measured after initial measurement at depreciated cost (less any accumulated impairment losses). The Group depreciates investment properties, except for land, using the straight-line method over their useful lives of 20–50 years.

2.13 Borrowing Costs

General and specific 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 or sale. Investment income earned on the temporary investment of specific borrowings on qualifying assets is deducted from the borrowing costs eligible for capitalization. Other borrowing costs are expensed in the period in which they are incurred.

2.14 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 consolidated statements 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.

2.15 Intangible Assets

Goodwill is recognized as the excess of the sum of the consideration transferred, amount of non-controlling interests in the acquired entity previously held by acquiring entity, and amount of acquisition-date fair value of any previous equity interest in the acquired entity over the net identifiable assets acquired. Goodwill is carried at its cost, less accumulated impairment losses. Impairment losses on goodwill are not reversed.

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Intangible assets, except for goodwill, are initially recognized at their historical cost and carried at their cost, less accumulated amortization and accumulated impairment losses.

Development costs that are directly attributable to internally generated by the Group are recognized when the criteria; such as, technically feasible, generate probable future economic benefits and others, are met. 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. The Group amortizes intangible assets with a limited useful life using the straight-line method over the following periods:

	Useful lives
Software	3–15 years
Development costs	3–15 years
Industrial property rights	1–15 years
Others	6–20 years

2.16 Research and Development

Costs associated with research are recognized as an expense as incurred. Costs that are identifiable, controllable and directly attributable to development projects are recognized as intangible assets when the following criteria are met:

- It is technically feasible to complete the development project so that it will be available for use.
- Management intends to complete the development project for its own use or selling.
- There is an ability to use or sell the development project.
- It can be demonstrated how the development project will generate probable future economic benefits.
- Adequate technical, financial resources and other resources to complete the development and to use or sell the development project are available.
- The expenditure attributable to the development project during its development can be reliably measured.

Generally, internally generated development projects have the following stages; formulation and selection of a project, verification of idea and technology, development and testing, decision of commercialization and test of final application. Expenditures can be capitalized as intangible assets only after the decision of commercialization. Expenditures incurred in other stages are recognized as expenses in the research phase.

Internally generated development projects in the Life Sciences business have the following stages; formulation of potential candidates, preclinical research, clinical research, such as phase 1, 2 and 3 trials, approval of regulatory body and new product launch. Expenditures incurred from new drug development projects are recognized as expensed in the research phase. However, expenditures incurred during clinical phase 1–3 trials from development projects for generic drugs or biosimilars are recognized as intangible assets depending on the nature of the products.

Expenditures incurred from technology license agreements with third parties are recognized as intangible assets.

Development costs previously recognized as an expense are not recognized as assets in a subsequent period. Capitalized development costs that are recognized as intangible assets are amortized using the straight-line method over their estimated useful lives when the assets are available for use and are tested for impairment.

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2.17 Impairment of Non-financial Assets

Goodwill and intangible assets with indefinite useful life are tested annually for impairment or more frequently if events or changes in circumstances indicate that they might be impaired. Other assets that are subject to amortization 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. 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.

2.18 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.

2.19 Financial Liabilities

(a) 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 designated as hedging instrument and an embedded derivative that is separated are also classified as held for trading.

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 payables,' 'borrowings' and 'other payables' in the consolidated statements of financial position.

Borrowings are initially recognized at fair value, net of transaction costs incurred. Borrowings are subsequently measured at amortized cost. Any difference between the proceeds (net of transaction costs) and the redemption amount is recognized in profit or loss over the period of the borrowings using the effective interest method. Fees paid on the establishment of loan facilities are recognized as transaction costs of the loan to the extent that it is probable that some or all of the facility will be drawn down. In this case, the fee is deferred until the draw-down occurs. To the extent there is no evidence that it is probable that some or all of the facility will be drawn down, the fee is capitalized as a prepayment for liquidity services and amortized over the period of the facility to which it relates.

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

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(b) Derecognition

Financial liabilities are removed from the consolidated statements of financial position when it is extinguished; for example, when the obligation specified in the contract is discharged or canceled 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.

2.20 Financial Guarantee Contracts

Financial guarantee contract is recognized as a financial liability at the time the guarantee is issued. The liability is initially measured at fair value, subsequently at the higher of following and recognized in the consolidated statements of financial position within 'other financial liabilities'.

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

2.21 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, and considers whether it is probable that a taxation authority will accept an uncertain tax treatment. The Group measures its tax balances either based on the most likely amount or the expected value, depending on which method provides a better prediction of the resolution of the uncertainty.

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 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 if 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.

2.22 Provisions

Provisions for service warranties, make good obligation and legal claims are recognized when the Group has a present legal or constructive obligation as a result of past events, it is probable that an outflow of resources will be required to settle the obligation and the amount can be reliably estimated. Provisions are measured at the present value of management's best estimate of the expenditure required to settle the present obligation at the end of the reporting period, and the increase in the provision due to the passage of time is recognized as interest expense.

2.23 Greenhouse Gas Emissions Permits and Obligations

With enforcement of *The Act on the Allocation and Trading of Greenhouse Gas Emission Permits*, the permits that are received free of charge from the government are measured at zero while permits purchased are measured at acquisition cost and stated net of accumulated impairment loss. Emission obligations are measured as the sum of the carrying amount of the allocated permits that will be submitted to the government and the best estimate of expenditure required to settle the obligation at the end of reporting period for any excess emission. The permits and emission obligations are classified as intangible assets and provisions, respectively, in the consolidated statements of financial position.

2.24 Employee Benefits

(a) Postemployment benefits

The Group operates both defined contribution and defined benefit pension plans. For defined contribution plans, the Group pays contribution to publicly or privately administered pension insurance plans on mandatory, contractual or voluntary basis. The Group has no further payment obligation once the contribution has been paid. The contribution is recognized as employee benefit expense when they are due. 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.

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(b) Other long-term employee benefits

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

2.25 Revenue Recognition

(a) Identify performance obligation

With regard to the contract of selling products to the customer, the Group identifies the services provided separately to the customer as a different performance obligation. When the Group makes a sales contract with the customer, the standard warranty period for each product and customer is set up considering the legal warranty period. Even though the standard warranty period has been expired, the warranties are recognized as a revenue and is identified as a separate performance obligation when the Group provides additional warranties for the quality of product or when the customer has an option to purchase additional warranties separately.

(b) A performance obligation satisfied at a point in time

The revenue from the sale of goods is recognized at the time they are delivered to the customer. Delivery occurs when the products have been shipped to the specific location, the risks of obsolescence and loss have been transferred to the customer, and either the customer has accepted the products in accordance with the sales contract, the acceptance provisions have lapsed or the Group has objective evidence that all criteria for acceptance have been satisfied.

The goods are often sold with volume discounts, and it is the group's policy to sell its products to the customer with a right of return. Accumulated experience is used to estimate the discounts and the refund, and the volume discounts are calculated based on the periodical forecast sales. The warranty provision for the sales and refund is reasonably estimated and recognized properly.

(c) Sales return

A gross contract liability for the expected refunds to customers is recognized as adjustment to revenue, and the Group has a right to recover the product from the customer where the customer exercises his right of return and recognizes an asset and a corresponding adjustment to cost of sales. A right to recover the products is measured at former carrying amount of the product, less the costs to recover the products.

(d) Significant financing component

As a practical expedient, the Group need not adjust the promised amount of consideration for the effects of a significant financing component as the period between when the entity transfers a promised good or service to a customer and when the customer pays for that good or service is generally one year or less.

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2.26 Lease

(a) Lessor

Lease income from operating leases where the Group is a lessor is recognized in income on a straight-line basis over the lease term. Initial direct costs incurred in obtaining an operating lease are added to the carrying amount of the underlying asset and recognized as expense over the lease term on the same basis as lease income. The respective leased assets are included in the consolidated statements of financial position based on their nature.

(b) Lessee

The Group leases various machinery, real estate and cars. Lease contracts are typically made for fixed periods, but may have extension options. 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.

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 have 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 payments that are based on an index or a rate, initially measured using the index or rate as of the commencement date
- Amounts expected to be payable by the Group (the lessee) under residual value guarantees
- The exercise price of a purchase option if the Group (the lessee) is reasonably certain to exercise that option
- Payments of penalties for terminating the lease, if the lease term reflects the Group (the lessee) exercising that option

Measurement of lease liability also includes payments to be made in optional periods if the lessee is reasonably certain to exercise an option to extend the lease.

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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, use 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 costs. 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 asset is depreciated over the underlying asset's useful life.

Payments associated with short-term leases of equipment and vehicles and leases of low-value assets are recognized on a straight-line basis as an expense in profit or loss. Short-term leases are leases with a lease term of 12 months or less without a purchase option. Low-value assets comprise IT equipment and small items of office furniture.

(c) Extension and termination options

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

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2.28 Segment Reporting

Information of each operating segment is reported in a manner consistent with the business segment reporting provided to the chief operating decision-maker. (Note 33) The chief operating decision-maker is responsible for allocating resources and assessing performance of the operating segments, and the Group has identified the Board of Directors as the chief operating decision-maker.

3. FINANCIAL RISK MANAGEMENT:

3.1 Financial Risk Factors

The Group's activities expose it to a variety of financial risks: market risk, credit risk and liquidity risk. The Group's overall risk management program focuses on the unpredictability of financial markets and seeks to minimize potential adverse effects on the financial performance of the Group. The Group uses derivative financial instruments to hedge certain risk exposures.

Risk management is carried out by the Group's finance team under policies approved by the Corporate Management Committee. The finance team identifies, evaluates and hedges financial risks in close cooperation with the Group's operating units. The Corporate Management Committee reviews and approves written principles for overall risk management, as well as written policies covering specific areas, such as foreign exchange risk, interest rate risk, and credit risk, use of derivative financial instruments and non-derivative financial instruments, investment of excess liquidity.

(1) Market risk

1) Foreign exchange risk

The Group operates internationally and is exposed to foreign exchange risk arising from foreign currency exposures, primarily with respect to the US dollar. Foreign exchange risk arises from future commercial transactions, recognized assets and liabilities.

Management has set up a policy to require Group to manage their foreign exchange risk against their functional currency. The Group manages maximum loss for currency risk exposures within acceptable range using currency risk management model and hires employees who are exclusively responsible for currency risk management.

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As of December 31, 2023 and 2022, the Group's monetary assets and liabilities denominated in currencies other than its functional currency, are as follows:

<i>(In millions of Korean won)</i>	December 31, 2023		December 31, 2022	
	Assets	Liabilities	Assets	Liabilities
USD	6,713,566	11,155,591	5,518,144	8,164,815
EUR	626,367	4,461,349	478,624	5,044,754
JPY	19,856	117,938	17,686	145,211
CNY and others	292,973	22,210	230,763	11,419

As of December 31, 2023 and 2022, if the Group's functional currency had weakened/strengthened by 10% against the US dollar with all other variables held constant, profit before income tax would have been affected as follows:

<i>(In millions of Korean won)</i>	December 31, 2023		December 31, 2022	
	10% Increase	10% Decrease	10% Increase	10% Decrease
USD	(359,888)	359,888	(75,555)	75,555
EUR	(363,333)	363,333	(418,930)	418,930
JPY	(9,806)	9,806	(12,603)	12,603
CNY and others	31,036	(31,036)	42,841	(42,841)

The above sensitivity analysis has been performed for monetary assets and liabilities denominated in foreign currencies other than the Group's functional currency at the reporting date.

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As of December 31, 2023 and 2022, the Group entered into foreign currency forward contracts to manage risk from changes in exchange rates as follows:

(In millions of Korean won and in millions of US dollars)

		December 31, 2023					
		Contract amount	Contract exchange rate	Contract inception date	Contract maturity	Book amount	
						Assets	Liabilities
Currency Forward	Industrial and Commercial Bank of China	USD 158	1,218.70	2022.4.22	2024.2.1	-	10,808
	Bank of America	USD 158	1,307.73	2023.12.5	2024.2.1	-	3,500
	Shinhan Bank	USD 500	1,135.60	2020.10.14	2024.10.15	65,388	-
	KB Kookmin Bank	USD 500	1,102.83	2020.11.24	2029.4.16	47,138	-
Currency swap	SMBC	USD 200	1,118.00	2021.5.28	2024.5.28	31,693	-
	KDB Bank	USD 130	1,135.60	2021.6.24	2025.6.24	24,902	-
	KDB Bank	USD 35	1,135.60	2021.6.24	2026.6.24	7,303	-
	Shinhan Bank	USD 300	1,131.80	2021.7.7	2026.7.7	31,996	-
	Woori Bank	USD 100	1,131.80	2021.7.7	2026.7.7	10,906	-
	Industrial and Commercial Bank of China	USD 100	1,131.80	2021.7.7	2026.7.7	11,057	-
	Shinhan Bank	USD 100	1,131.80	2021.7.7	2031.7.7	6,234	-
	Woori Bank	USD 200	1,131.80	2021.7.7	2031.7.7	13,025	-
	KDB Bank	USD 200	1,131.80	2021.7.7	2031.7.7	13,108	-
	KDB Bank	USD 250	1,289.70	2022.6.15	2025.6.15	30	-
	Shinhan Bank	USD 110	1,289.70	2022.6.15	2027.6.15	-	1,399
	The Export-Import Bank of Korea	USD 200	1,305.90	2022.7.14	2025.7.14	-	6,571
	Shinhan Bank	USD 100	1,305.90	2022.7.14	2025.7.14	-	3,274
	KDB Bank	USD 200	1,233.40	2023.1.26	2025.1.26	12,236	-
	Shinhan Bank	USD 100	1,233.40	2023.1.26	2026.1.26	5,097	-
	KDB Bank	USD 100	1,233.40	2023.1.26	2026.1.26	5,332	-
JP Morgan	USD 200	1,337.60	2023.9.25	2026.9.25	-	10,945	
Shinhan Bank	USD 200	1,337.60	2023.9.25	2026.9.25	-	10,722	
KDB Bank	USD 400	1,337.60	2023.9.25	2028.9.25	-	30,788	
Woori Bank	USD 200	1,337.60	2023.9.25	2028.9.25	-	15,407	

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(In millions of Korean won and in millions of US dollars)

		December 31, 2022					
		Contract amount	Contract exchange rate	Contract inception date	Contract maturity	Book amount	
						Assets	Liabilities
Currency Forward	Citi	USD 105	1,234.60	2022.4.22	2023.2.1	-	3,348
	Industrial and Commercial Bank of China	USD 158	1,218.70	2022.4.22	2024.2.1	-	4,364
	Shinhan Bank	USD 500	1,135.60	2020.10.14	2024.10.15	47,695	-
	KB Kookmin Bank	USD 500	1,102.83	2020.11.24	2029.4.16	41,780	-
	ING	EUR 100	4.7800 ¹	2022.1.5	2023.1.5	-	2,522
Currency swap	SMBC	USD 200	1,118.00	2021.5.28	2024.5.28	22,974	-
	KDB Bank	USD 130	1,135.60	2021.6.24	2025.6.24	26,317	-
	KDB Bank	USD 35	1,135.60	2021.6.24	2026.6.24	7,898	-
	Shinhan Bank	USD 300	1,131.80	2021.7.7	2026.7.7	26,599	-
	Woori Bank	USD 100	1,131.80	2021.7.7	2026.7.7	9,067	-
	Industrial and Commercial Bank of China	USD 100	1,131.80	2021.7.7	2026.7.7	9,175	-
	Shinhan Bank	USD 100	1,131.80	2021.7.7	2031.7.7	6,192	-
	Woori Bank	USD 200	1,131.80	2021.7.7	2031.7.7	12,852	-
	KDB Bank	USD 200	1,131.80	2021.7.7	2031.7.7	12,926	-
	KDB Bank	USD 250	1,289.70	2022.6.15	2025.6.15	-	3,374
	Shinhan Bank	USD 110	1,289.70	2022.6.15	2027.6.15	-	1,700
	The Export-Import Bank of Korea	USD 200	1,305.90	2022.7.14	2025.7.14	-	10,360
	Shinhan Bank	USD 100	1,305.90	2022.7.14	2025.7.14	-	5,003

¹ Cross exchange rate between PLN and EUR.

2) Price risk

The Group is exposed to equity securities price risk arising from investments held by the Group and classified in the consolidated statement of financial position as non-current financial assets. The Group's equity investments are publicly traded and are related to the NASDAQ (National Association of Securities Dealers Automated Quotations), NYSE (New York Stock Exchange), SZSE (Shenzhen Stock Exchange), HSI (Hang Seng Index), ASX (Australian Stock Exchange) and KOSPI index.

The table below summarizes the impact of increases/decreases of the listed stock price index on the Group's equity before tax effects as of December 31, 2023 and 2022. The analysis is based on the assumption that the equity index has increased/decreased by 10% with all other variables held constant and that all the Group's equity instruments moved in line with the index.

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	December 31, 2023		December 31, 2022	
	10% Increase	10% Decrease	10% Increase	10% Decrease
NASDAQ	14,104	(14,104)	2,561	(2,561)
ASX	1,640	(1,640)	1,167	(1,167)
NYSE	520	(520)	4,416	(4,416)
SZSE	8,534	(8,534)	3,747	(3,747)
HSI	9,277	(9,277)	8,349	(8,349)
KOSPI	15,989	(15,989)	17,667	(17,667)
Total	50,064	(50,064)	37,907	(37,907)

3) Interest rate risk

Interest rate risk is defined as the risk that the interest income or expenses arising from deposits and borrowings will fluctuate because of changes in future market interest rates. The interest rate risk mainly arises through floating rate deposits and borrowings. The objective of interest rate risk management lies in maximizing corporate value by minimizing uncertainty in interest rate fluctuations and net interest expense.

The Group adequately minimizes risks from interest rate fluctuations through various policies, such as sharing excess cash within the Group (internal cash sharing) to minimize external borrowings, avoiding high-rate borrowings, reforming capital structure, managing an appropriate ratio of fixed rate borrowings and floating rate borrowings, monitoring a fluctuation of domestic and foreign interest rates daily, weekly and monthly, establishing alternatives, and balancing floating rate short-term borrowings with floating rate deposits.

The table below summarizes the impact of increases/decreases in interest rates on the Group's equity and posttax profit for the year. The analysis is based on the assumption that the interest rate has increased/decreased by 1% (100 basis points), with all other variables held constant.

(In millions of Korean won)

	Impact on posttax profit		Impact on equity		
	2023	2022	2023	2022	
Increase	Deposits	22,470	44,606	22,470	44,606
	Borrowings	(41,130)	(41,996)	(41,130)	(41,996)
	Total	(18,660)	2,610	(18,660)	2,610
Decrease	Deposits	(22,470)	(44,606)	(22,470)	(44,606)
	Borrowings	41,130	41,996	41,130	41,996
	Total	18,660	(2,610)	18,660	(2,610)

The deposits exposed to the above interest rate risk are held for the purpose of meeting the short-term demand for cash as it is easily convertible to a determined amount of cash. Also, the above borrowings are variable interest rate borrowings from KDB Bank and others, and the Group has entered into a currency interest rate swap contract amounting to USD 925 million (equivalent to ₩1,192,695 million) to hedge interest rate risk of variable interest rate borrowings.

(2) Credit risk

Credit risk arises from trade receivables that the Group holds, as well as other financial assets at amortized cost.

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1) Trade receivables

The Group applies the simplified approach to measuring expected credit losses, which uses a lifetime expected loss allowance for trade receivables. To measure the expected credit losses, trade receivables have been grouped based on shared credit risk characteristics and the days past due. The loss allowance provision as of December 31, 2023, is as follows. Expected credit losses include forward-looking information.

(In millions of Korean won)

	Receivables not past due ¹	Receivables past due but not impaired ¹	Impaired receivables ²	Total
December 31, 2023				
(trade receivables)				
Gross carrying amount	8,065,741	148,163	1,854	8,215,758
Expected loss rate	0.0%	0.4%	64.0%	0.0%
Loss allowance	1,071	552	1,187	2,810
December 31, 2022				
(trade receivables)				
Gross carrying amount	7,349,259	223,992	2,859	7,576,110
Expected loss rate	0.0%	0.3%	88.4%	0.1%
Loss allowance	1,900	591	2,526	5,017

¹ See Note 7.(3) for aging analysis.

² Impaired receivables are those for which impairment indicators have been confirmed, such as significant lack of collectability.

Movements in the loss allowance provision for trade receivables for the years ended December 31, 2023 and 2022, are as follows:

(In millions of Korean won)

	Trade receivables	
	December 31, 2023	December 31, 2022
Beginning balance	5,017	5,094
Increase in (reversal of) loss allowance recognized in profit or loss	(636)	-
Business combination(Note 37)	-	724
Receivables written off as uncollectible	(1,234)	(849)
Exchange differences	(337)	48
Ending balance	2,810	5,017

As of December 31, 2023, the carrying amount of trade receivables representing the maximum exposure to credit risk amounts to ₩8,212,948 million (2022: ₩7,571,093 million).

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2) Other financial assets at amortized cost

Movements in loss allowance provision for other financial assets at amortized cost for the years ended December 31, 2023 and 2022, are as follows:

(In millions of Korean won)

	Other receivables	
	December 31, 2023	December 31, 2022
Beginning balance	682	2,165
Reversal of loss allowance recognized in profit or loss	-	(331)
Receivables written off as uncollectible	(54)	(1,152)
Ending balance	628	682

All of the financial assets at amortized costs are considered to have low credit risk, and the loss allowance recognized during the period was, therefore, limited to 12 months of expected losses.

The Group has established the following policies and procedures to manage credit risks.

To manage credit risks relating to trade receivables, the Group evaluates the credit rating of customers and determines credit limits for each customer based on the information provided by credit rating agencies and other available financial information before commencing business with new customers. The credit risks relating to trade receivables are also mitigated by insurance contracts, collateral, as well as payment guarantees.

The Group has entered into export bond insurance contracts with Korea Trade Insurance Corporation to mitigate credit risks relating to export trade receivables to overseas customers. The Group is also provided with collateral by customers depending on their credit rating or payment guarantees from the customers' financial institutions if necessary.

The Group has deposited its cash and cash equivalents and other long-term deposits in several financial institutions, such as Woori Bank and others. The Group has also entered into derivative contract with several financial institutions. The Group maintains business relationship with those financial institutions with high credit ratings evaluated by independent credit rating agencies and accordingly, credit risks associated with these financial institutions are limited.

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(3) Liquidity risk

Finance team of the Group monitors rolling forecasts of the Group's liquidity requirements to ensure it has sufficient cash to meet operational needs while maintaining sufficient headroom on its undrawn committed borrowing facilities at all times so that the Group does not breach borrowing limits or covenants (where applicable) on any of its borrowing facilities. When predicting liquidity, considerations are taken into account from external regulations or legal requirements such as funding plans of consolidation units, compliance with agreements, internal target financial ratios within consolidation units, and restrictions related to currency.

The table below categorizes the financial liabilities of consolidation units based on the remaining period from the end of the reporting period to the contract maturity date. The cash flows presented in the table are amounts not discounted as present value and include the cash flows related to interest expenses.

<i>(In millions of Korean won)</i>	December 31, 2023			
	Less than 1 year	Between 1 year-2 years	Between 2-5 years	More than 5 years
Non-derivative financial instruments				
Borrowings (excluding lease liabilities)	5,876,982	3,647,796	11,356,290	5,763,791
Lease liabilities	123,528	121,499	85,865	242,717
Trade and other payables	9,022,994	19,953	13,363	102
	<u>15,023,504</u>	<u>3,789,248</u>	<u>11,455,518</u>	<u>6,006,610</u>
Derivative instruments				
Gross settlement currency forwards and swaps				
(Inflows)	(1,416,608)	(1,256,394)	(2,152,233)	(1,335,335)
Outflows	1,278,089	1,204,261	2,102,600	1,155,602
	<u>(138,519)</u>	<u>(52,133)</u>	<u>(49,633)</u>	<u>(179,733)</u>
	<u>14,884,985</u>	<u>3,737,115</u>	<u>11,405,885</u>	<u>5,826,877</u>

Although not included in the above cash flow, the agreement is made to purchase additional shares of LG Toray Hungary Battery Separator kft. in accordance with the agreed price calculation method (see Note 18). Additionally, during the period ended December 31, 2023, the Group issued exchangeable bonds that allow issuers and investors to exercise their early redemption rights (see Note 14).

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<i>(In millions of Korean won)</i>	December 31, 2022			
	Less than 1 year	Between 1 year-2 years	Between 2-5 years	More than 5 years
Non-derivative financial instruments				
Borrowings (excluding lease liabilities)	4,098,366	3,315,867	5,730,247	3,963,315
Lease liabilities	138,892	70,516	100,099	120,992
Trade and other payables	9,655,799	41,085	1,546	1,077
	<u>13,893,057</u>	<u>3,427,468</u>	<u>5,831,892</u>	<u>4,085,384</u>
Derivative instruments				
Gross settlement currency forwards and swaps				
(Inflows)	(344,898)	(1,157,662)	(1,787,213)	(1,327,497)
Outflows	328,856	1,047,373	1,694,337	1,168,399
Total Derivative instruments	<u>(16,042)</u>	<u>(110,289)</u>	<u>(92,876)</u>	<u>(159,098)</u>
Total	<u>13,877,015</u>	<u>3,317,179</u>	<u>5,739,016</u>	<u>3,926,286</u>

As of December 31, 2023 and 2022, the Group has entered into swap contracts for which cash flow hedge accounting is applied to avoid market price fluctuation of raw materials.

<i>(In millions of Korean won)</i>	of Purpose of the contracts	Hedged items	Financial institution	Maturity	December 31, 2023		December 31, 2022	
					Assets	Liabilities	Assets	Liabilities
Merchandise (raw materials) swap ¹	Cash flow hedge	Non-ferrous metal	Citi Bank and others	2026. 12	88	4,899	13,931	2,143

¹ Gain (loss) resulting from the contracts to avoid cash flow fluctuation risk of expected future transaction is accounted for as accumulated other comprehensive income, which corresponds to an effective portion of the hedges (Note 5).

Details of financial guarantee contracts by maturity as of December 31, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	December 31, 2023			
	Less than 1 year	Between year-2 years	Between 2-5 years	More than 5 years
Financial guarantee contracts(*)	458,382	-	-	-
<i>(In millions of Korean won)</i>	December 31, 2022			
	Less than 1 year	Between 1 year-2 years	Between 2-5 years	More than 5 years
Financial guarantee contracts (*)	450,525	-	-	-

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(*) The financial guarantee contracts above are for joint ventures and are presented based on the maximum amount of guarantee that can be requested as of December 31, 2023 and 2022 (see Note 18).

3.2 Capital Risk Management

The Group's objectives for 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.

Consistent with others in the industry, the Group monitors capital on the basis of the gearing ratio. This ratio is calculated as net debt divided by total capital. Net debt is calculated as total borrowings, less cash and cash equivalents. Total capital is calculated as 'equity' as shown in the consolidated statement of financial position plus net debt.

The gearing ratio and debt-to-equity ratio as of December 31, 2023 and 2022, were as follows:

<i>(In millions of Korean won, except for ratios)</i>	December 31, 2023	December 31, 2022
Total borrowings (Note 14) (A)	21,928,114	15,964,519
Less: cash and cash equivalents (B)	<u>(9,084,899)</u>	<u>(8,497,882)</u>
Net debt (C=A+B)	<u>12,843,215</u>	<u>7,466,637</u>
Total liabilities (D)	36,528,509	30,492,696
Total equity (E)	<u>40,938,185</u>	<u>37,481,127</u>
Total capital (F=C+E)	<u>53,781,400</u>	<u>44,947,764</u>
Gearing ratio (C/F)	23.9%	16.6%
Debt-to-equity ratio (D/E)	89.2%	81.4%

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3.3 Fair Value

(1) Carrying amount and fair value of financial instruments by category as of December 31, 2023 and 2022, are as follows:

(In millions of Korean won)

	December 31, 2023		December 31, 2022	
	Carrying amount	Fair value	Carrying amount	Fair value
Financial assets (current)				
Cash and cash equivalents	9,084,899	1	8,497,882	1
Deposits held by financial institutions	57,106	1	14,448	1
Trade receivables	8,082,952	1	7,450,395	1
Other receivables (excluding deposits held by financial institutions)	625,072	1	727,983	1
Current derivative financial assets (currency forward)	65,388	65,388	-	-
Current derivative financial assets (excluding currency forward)	51	51	9,167	9,167
Current derivative financial assets (currency swap)	31,693	31,693	-	-
Current derivative financial assets (purchase of interests)	44,296	44,296	-	-
Financial assets (non-current)				
Deposits held by financial institutions	267,558	1	277,210	1
Trade receivables	129,996	1	120,698	1
Other receivables (excluding deposits held by financial institutions)	160,135	1	340,234	1
Other non-current financial assets (carried at fair value)				
Marketable financial assets (excluding derivative financial assets)	507,186	507,186	462,330	462,330
Non-marketable financial assets ³	514,924	514,924	495,484	495,484
Non-current derivative financial assets (currency forward)	47,138	47,138	89,475	89,475
Non-current derivative financial assets (excluding currency forward)	142,076	142,076	138,764	138,764
Non-current derivative financial assets (purchase of interests)	17,177	17,177	51,114	51,114
Financial liabilities (current)				
Trade and other payables	9,022,994	1	9,655,799	1
Current borrowings (excluding lease liabilities/exchangeable bond)	4,979,229	1	3,709,288	1
Current borrowings (exchangeable bond)	1,998,423	2,220,842	-	-
Current lease liabilities	100,130	2	95,079	2
Current derivative financial liabilities (currency forward)	14,308	14,308	5,870	5,870
Current derivative financial liabilities (excluding currency forward)	3,936	3,936	1,401	1,401
Current financial liabilities	501,951	501,951	-	-

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	December 31, 2023		December 31, 2022	
	Carrying amount	Fair value	Carrying amount	Fair value
(right of exchange/option)				
Financial guarantee contracts liabilities	3,715	¹	-	-
Financial liabilities (non-current)				
Non-current borrowings (excluding lease liabilities)	14,458,596	13,537,804	11,865,593	11,092,812
Non-current lease liabilities	391,736	²	294,559	²
Other non-current payables	33,418	¹	43,708	¹
Non-current derivative financial liabilities (currency forward)	-	-	4,364	4,364
Non-current derivative financial liabilities (excluding currency forward)	80,069	80,069	21,178	21,178
Non-current derivative financial liabilities (purchase of interests)	19,881	19,881	7,777	7,777

¹ These financial assets and liabilities are not included in the disclosure above as their carrying amount is a reasonable approximation of the fair value.

² Fair values for these financial assets and liabilities are not disclosed above in accordance with related Korean IFRS.

³ Including some unmarketable financial assets for which acquisition cost is used as the best estimate of fair value.

(2) For measurement and disclosure purposes, fair value was determined based on the method described below.

The fair value of financial liabilities was calculated by applying the following discount rate to the nominal value of expected future outflow cash flows.

Discount Rate	December 31, 2023	December 31, 2022	Remark
Current borrowings (Exchangeable Bond)	4.55% / 4.47%	-	Yield of foreign currency debenture equal to the maturity of the evaluation target
Non-current borrowings (excluding lease liabilities/ exchangeable bond)	3.64%–4.79%	4.94%–5.33%	Yield of won debenture with credit rating (AA+)

(3) Fair value hierarchy

Items that are measured at fair value are categorized by the fair value hierarchy levels, and the defined levels are as follows:

- Quoted prices (unadjusted) in active markets for identical assets or liabilities that an entity can access at the measurement date (Level 1).
- 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 2).
- Unobservable inputs for the asset or liability (Level 3).

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Fair value hierarchy classifications of the financial instruments that are measured at fair value or their fair value are disclosed as at December 31, 2023 and 2022, are as follows:

<i>(in millions of Korean won)</i>	December 31, 2023			
	Level 1	Level 2	Level 3	Total
Financial assets/liabilities measured at fair value				
Other non-current financial assets (marketable financial assets)	507,186	-	-	507,186
Other non-current financial assets (non-marketable financial assets) ^(*)	-	-	514,924	514,924
Current derivative financial assets (currency forward)	-	65,388	-	65,388
Current derivative financial assets (excluding currency forward)	-	51	-	51
Current derivative financial assets (currency swap)	-	31,693	-	31,693
Current derivative financial assets (purchase of interests)	-	-	44,296	44,296
Non-current derivative financial assets (currency forward)	-	47,138	-	47,138
Non-current derivative financial assets (excluding currency forward)	-	142,076	-	142,076
Non-current derivative financial assets (purchase of interests)	-	-	17,177	17,177
Current derivative financial liabilities (currency forward)	-	14,308	-	14,308
Current derivative financial liabilities (excluding currency forward)	-	3,936	-	3,936
Current derivative financial liabilities (right of exchange/option)	-	-	501,951	501,951
Non-current derivative financial liabilities (excluding currency forward)	-	80,069	-	80,069
Non-current derivative financial liabilities (purchase of interests)	-	-	19,881	19,881

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<i>(In millions of Korean won)</i>	2022			
	Level 1	Level 2	Level 3	Total
Financial assets/liabilities measured at fair value				
Other non-current financial assets (marketable financial assets)	462,330	-	-	462,330
Other non-current financial assets (non-marketable financial assets) ^(*)	-	-	495,484	495,484
Current derivative financial assets (excluding currency forward)	-	9,167	-	9,167
Non-current derivative financial assets (currency forward)	-	89,475	-	89,475
Non-current derivative financial assets (excluding currency forward)	-	138,764	-	138,764
Non-current derivative financial assets (purchase of interests)	-	-	51,114	51,114
Current derivative financial liabilities (currency forward)	-	5,870	-	5,870
Current derivative financial liabilities (excluding currency forward)	-	1,401	-	1,401
Non-current derivative financial liabilities (currency forward)	-	4,364	-	4,364
Non-current derivative financial liabilities (excluding currency forward)	-	21,178	-	21,178
Non-current derivative financial liabilities (purchase of interests)	-	-	7,777	7,777

^(*) Acquisition costs of a part of these financial assets approximate their fair values. For fair values measured by using other methods, see (3) Valuation technique and the inputs.

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(4) Valuation technique and the inputs

Valuation techniques and inputs used in the fair value measurements categorized within Level 3 of the fair value hierarchy as of December 31, 2023 and 2022, are as follows:

(In millions of Korean won)

	December 31, 2023						
	Fair value	Level	Valuation Technique	Inputs	Coverage of Level 3 inputs		
Current derivative financial assets (purchase of interests)	44,296	3	Monte Carlo Simulation	Stock volatility of underlying assets	32.78%		
				Stock price correlation coefficient	37.38%		
				Volatility of Financial Indicators	42.17%		
Non-current derivative financial assets (purchase of interests)	17,177	3	Binominal option-pricing model	Volatility	31.51%		
				Risk-free rate	4.57%		
Non-current derivative financial liabilities (purchase of interests)	19,881	3	Monte Carlo Simulation	Stock volatility of underlying assets	32.78%		
				Stock price correlation coefficient	42.98%		
				Volatility of Financial Indicators	21.82%		
Other non-current financial assets (Non-listed shares)	82,517	3	Binominal option-pricing model	Volatility	45.6% and others		
				37,164	Discounted cash flows model	Discount rates	11.31% and others
						133,655	Adjusted net asset method
Non-current borrowings (right of exchange /option)	501,951	3	Binominal option-pricing model	Stock price of underlying assets	427,500 won		
				Risk-free rate	3.17%/3.19%		
				Risk rate	4.55%/4.47%		
				Volatility	45.38%		

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	December 31, 2022				
	Fair value	Level	Valuation Technique	Inputs	Coverage of Level 3 inputs
Non-current derivative financial assets (acquisition of interests)	46,555	3	Monte Carlo Simulation	Stock volatility of underlying assets	40.54%
				Stock price correlation coefficient	35.81%
				Volatility of Financial Indicators	44.11%
	4,559	3	Binominal option pricing model	Volatility	45.60%
Non-current derivative financial liabilities (acquisition of interests)	7,777	3	Monte Carlo Simulation	Stock volatility of underlying assets	40.54%
				Stock price correlation coefficient	57.86%
				Volatility of Financial Indicators	21.90%
Other non-current financial assets (non-listed shares)	14,437	3	Binominal option-pricing model	Volatility	25.92%
	46,682	3	Discounted cash flows model	Discount rates	13.53%
	189,476	3	Adjusted net asset method	-	-

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(5) Changes in Level 3 of the Fair Value Hierarchy for the Recurring Fair Value Measurements

(In millions of Korean won)	December 31, 2023		December 31, 2022	
	Financial assets measured at fair value	Financial liabilities measured at fair value	Financial assets measured at fair value	Financial liabilities measured at fair value
Beginning balance	546,598	7,777	356,983	-
Transfer (from) into Level 3	97,007	604,407	131,674	8,545
Gains (losses) recognized in profit for the year	26,631	(90,352)	(9,971)	(768)
Gains recognized in other comprehensive income	(93,839)	-	67,912	-
Ending balance	<u>576,397</u>	<u>521,832</u>	<u>546,598</u>	<u>7,777</u>

4. CRITICAL ACCOUNTING ESTIMATES AND ASSUMPTIONS:

The preparation of financial statements requires the Group to make estimates and assumptions concerning the future. Management also needs to exercise judgment 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. The resulting accounting estimates may differ from the related actual results. The management's judgment and the estimates and assumptions of significant risk that may have adjustments to the carrying amounts of assets and liabilities in the following fiscal year are addressed as below.

(a) Impairment test of goodwill

The Group tests whether goodwill has suffered any impairment on an annual basis. The recoverable amount of a cash-generating unit (CGU) is determined based on value-in-use or fair value less cost of disposal calculations (see Note 12).

(b) Income taxes

If certain portion of the taxable income is not used for investments or increases in wages or dividends in accordance with the *Tax System for Recirculation of Corporate Income*, the Group is liable to pay additional income tax calculated based on the tax laws. Accordingly, the measurement of current and deferred income tax is affected by the tax effects of the new tax system. As the Group's income tax is dependent on the investments, increases in wages and dividends, there is an uncertainty in measuring the final tax effects.

(c) Provisions

The Group recognizes provisions for product warranties, as explained in Note 15. These provisions are estimated based on the past experience. Provisions related to voluntary recall by the Group's customer are estimated based on the number of vehicles subject to recall, estimated total repair costs, and cost-sharing ratio.

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(d) Fair value of financial instruments

The fair value of financial instruments that are not traded in an active market is determined by using valuation techniques. The Group uses its judgment to select a variety of methods and make assumptions that are mainly based on market conditions existing at the end of each reporting period (see Note 3.3).

(e) Impairment of financial assets

The provision for impairment of financial assets is based on assumptions about risk of default and expected loss rates. The Group uses judgment in making these assumptions and selecting the inputs to the impairment calculation based on the Group's past experience, existing market conditions, as well as forward-looking estimates at the end of each reporting period (see Note 3.1.(2)).

(f) Net defined benefit liabilities

The present value of net defined benefit liability depends on a number of factors that are determined on an actuarial basis using a number of assumptions, including the discount rate (see Note 16).

(g) Leases

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

The lease term is reassessed if an option is actually exercised (or not exercised) or the Group becomes obliged to exercise (or not exercise) it. The assessment of reasonable certainty is only revised if a significant event or a significant change in circumstances occurs, which affects this assessment, and that is within the control of the lessee (see Note 11).

(h) Valuation of Inventories

Inventories are stated at the lower of cost and net realizable value, which is determined by the estimated selling price and the estimated costs necessary to make the sale. The assessment of slow-moving inventories is made of net realizable value estimated with the market circumstances and the historical experience (see Note 9).

(i) Impairment assessment of CGU

To assess the recoverable amount for CGUs for impairment of property, plant and equipment and intangible assets, it is determined based on the higher amount between value in use and the net fair value, less costs of disposal.

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5. FINANCIAL INSTRUMENTS BY CATEGORY:

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

(In millions of Korean won)

Financial assets	December 31, 2023				Total
	Financial assets at amortized cost	Financial assets at fair value through profit or loss	Financial assets at fair value through other comprehensive income	Other financial assets ¹	
Cash and cash equivalents	9,084,899	-	-	-	9,084,899
Trade receivables	7,425,071	-	657,881	-	8,082,952
Non-current trade receivables	129,996	-	-	-	129,996
Other receivables	681,307	-	871	-	682,178
Other non-current receivables	427,693	-	-	-	427,693
Other current financial assets	-	-	-	141,428	141,428
Other non-current financial assets	-	387,487	634,623	206,391	1,228,501
Total	17,748,966	387,487	1,293,375	347,819	19,777,647

(in thousands of Korean won)

Financial liabilities	December 31, 2023		Total
	Financial liabilities at amortized cost	Other financial liabilities ²	
Trade payables	4,117,913	-	4,117,913
Other payables	4,905,081	-	4,905,081
Borrowings (current)	6,978,097	99,685	7,077,782
Other current financial liabilities	-	523,910	523,910
Other non-current financial liabilities	-	99,950	99,950
Other non-current payables	33,418	-	33,418
Borrowings (non-current)	14,458,596	391,736	14,850,332
Total	30,493,105	1,115,281	31,608,386

(In millions of Korean won)

Financial assets	December 31, 2022				Total
	Financial assets at amortized cost	Financial assets at fair value through profit or loss	Financial assets at fair value through other comprehensive income	Other financial assets ¹	
Cash and cash equivalents	8,497,882	-	-	-	8,497,882
Trade receivables	6,919,243	-	531,152	-	7,450,395
Non-current trade receivables	120,698	-	-	-	120,698
Other receivables	741,000	-	1,431	-	742,431
Other non-current receivables	617,444	-	-	-	617,444
Other current financial assets	-	-	-	9,167	9,167
Other non-current financial assets	-	245,459	712,355	279,353	1,237,167
Total	16,896,267	245,459	1,244,938	288,520	18,675,184

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<i>(in thousands of Korean won)</i>	December 31, 2022		
	Financial liabilities at amortized cost	Other financial liabilities²	Total
Financial liabilities			
Trade payables	4,756,246	-	4,756,246
Other payables	4,899,553	-	4,899,553
Borrowings (current)	3,709,288	95,079	3,804,367
Other current financial liabilities	-	7,271	7,271
Other non-current financial liabilities	-	33,319	33,319
Other non-current payables	43,708	-	43,708
Borrowings (non-current)	11,865,593	294,559	12,160,152
Total	25,274,388	430,228	25,704,616

¹ Other financial assets include derivative assets that are not subject to the categorizations.

² Other financial liabilities include lease liabilities, derivative liabilities and negotiated borrowings that are not subject to the categorizations.

Net gains or losses on each category of financial instruments for the years ended December 31, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Dividend income		
Financial assets at fair value through other comprehensive income	24,353	1,979
Financial assets at fair value through profit or loss	289	-
Impairment losses(reversal)		
Financial assets at amortized cost	(636)	(331)
Interest income		
Financial assets at amortized cost	316,847	252,456
Interest expense		
Financial liabilities at amortized cost	(695,829)	(300,300)
Other financial liabilities	(10,937)	(9,495)
Financial assets at amortized cost ¹	(30,443)	(8,278)
Gain (loss) on valuation/disposal		
Financial assets at fair value through profit or loss	16,502	7,141
Financial assets at fair value through other comprehensive income	(222,998)	(62,993)
Derivative instruments	92,877	55,360
Exchange differences		
Financial assets at amortized cost	174,247	452,097
Financial liabilities at amortized cost	291,358	(595,817)
Derivative instruments	(517)	3,122
Other financial liabilities	999	(16,795)

¹ Fees paid to financial institutions for factoring.

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6. CASH AND CASH EQUIVALENTS:

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

<i>(In millions of Korean won)</i>	December 31, 2023	December 31, 2022
Bank deposits and cash on hand	3,411,992	1,640,251
Deposits held by financial institutions and others	5,672,907	6,857,631
Total	9,084,899	8,497,882

As of December 31, 2023, cash and cash equivalents include ₩7,038 million, which is subject to a restriction on the use in association with the national R&D projects (2022: ₩11,364 million).

7. TRADE AND OTHER RECEIVABLES:

Trade and other receivables and their provisions for impairment as of December 31, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	December 31, 2023		
	Gross amount	Provision for impairment	Carrying amount
Trade receivables	8,085,762	(2,810)	8,082,952
Non-current trade receivables	129,996	-	129,996
Other current receivables	682,806	(628)	682,178
Other non-current receivables	427,693	-	427,693
Total	9,326,257	(3,438)	9,322,819

<i>(In millions of Korean won)</i>	December 31, 2022		
	Gross amount	Provision for impairment	Carrying amount
Trade receivables	7,455,412	(5,017)	7,450,395
Non-current trade receivables	120,698	-	120,698
Other current receivables	743,113	(682)	742,431
Other non-current receivables	617,444	-	617,444
Total	8,936,667	(5,699)	8,930,968

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

<i>(In millions of Korean won)</i>	December 31, 2023	December 31, 2022
Current		
Non-trade receivables	565,769	487,646
Deposits held by financial institutions ¹	57,106	14,448
Accrued income	16,570	68,294
Loans	-	129,908
Guarantee deposits provided	42,733	42,135
	<u>682,178</u>	<u>742,431</u>
Non-current		
Non-trade receivables	35,255	30,793
Deposits held by financial institutions ¹	267,558	277,210
Loans	9,890	207,247
Guarantee deposits provided	114,990	102,194
	<u>427,693</u>	<u>617,444</u>
Total	<u>1,109,871</u>	<u>1,359,875</u>

¹ As of December 31, 2023, ₩266,100 million (2022: ₩266,100 million) is withdrawal restricted in relation to large-, small- and medium-sized companies cooperation agreement, ₩110 million is restricted in use to be retained in connection with maintaining checking accounts (2022: ₩123 million), and ₩5,000 million (2022: ₩10,000 million) is restricted in use to be retained in connection with employee loan deposits. Also, PLN 4 million (2022: PLN 3 million) is withdrawal restricted in relation to overseas transportation of hazardous waste.

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

<i>(In millions of Korean won)</i>	December 31, 2023		December 31, 2022	
	Trade receivables	Other receivables	Trade receivables	Other receivables
Receivables not past due	8,065,741	1,053,672	7,349,259	1,309,179
Past due but not impaired	148,163	56,199	223,992	50,696
Up to 3 months	106,433	31,350	220,785	31,873
Between 3-6 months	40,162	14,950	2,445	10,989
More than 6 months	1,568	9,899	762	7,834
Impaired receivables	1,854	628	2,859	682
Total	<u>8,215,758</u>	<u>1,110,499</u>	<u>7,576,110</u>	<u>1,360,557</u>

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Movements on the provision for impairment of trade and other receivables for the years ended December 31, 2023 and 2022, are as follows:

(In millions of Korean won)

	December 31, 2023			
	Trade receivables		Other receivables	
	Current	Non-current	Current	Non-current
Beginning balance	5,017	-	682	-
Reversal	(636)	-	-	-
Business combination (Note 37)	-	-	-	-
Write-off	(1,234)	-	(54)	-
Exchange differences	(337)	-	-	-
Ending balance	2,810	-	628	-

(In millions of Korean won)

	December 31, 2022			
	Trade receivables		Other receivables	
	Current	Non-current	Current	Non-current
Beginning balance	5,094	-	2,165	-
Reversal	-	-	(331)	-
Business combination (Note 37)	724	-	-	-
Write-off	(849)	-	(1,152)	-
Exchange differences	48	-	-	-
Ending balance	5,017	-	682	-

As of December 31, 2023 and 2022, the carrying amounts of trade and other receivables are approximations of their fair values.

The Group transferred trade and other receivables to financial institutions for ₩38,358 million as of December 31, 2023 (2022: ₩201,640 million), and derecognized the trade and other receivables from the financial statements at the date of disposal, as substantial all the risks and rewards were transferred.

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8. OTHER FINANCIAL ASSETS AND LIABILITIES:

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

(In millions of Korean won)

	December 31, 2023	December 31, 2022
Other financial assets		
Financial assets at fair value through other comprehensive income (derivative instruments) (current)	51	9,167
Financial assets at fair value through profit or loss (derivative instruments) (current)	141,377	-
Financial assets at fair value through other comprehensive income (derivative instruments) (non-current)	38	4,764
Financial assets at fair value through other comprehensive income (excluding derivative instruments) (non-current)	634,623	712,355
Financial assets at fair value through profit or loss (derivative instruments) (non-current)	206,353	274,589
Financial assets at fair value through profit or loss (excluding derivative instruments) (non-current)	387,487	245,459
	<u>1,369,929</u>	<u>1,246,334</u>
Other financial liabilities		
Financial guarantee contracts	3,715	-
Financial liabilities at fair value through other comprehensive income (derivative instruments) (current)	3,936	1,401
Financial liabilities at fair value through profit or loss (derivative instruments) (current)	516,259	5,870
Financial liabilities at fair value through other comprehensive income (derivative instruments) (non-current)	962	742
Financial liabilities at fair value through profit or loss (derivative instruments) (non-current)	98,988	32,577
	<u>623,860</u>	<u>40,590</u>

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Changes in equity and debt instruments included in other financial assets for the years ended December 31, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Beginning balance	958,060	362,452
Acquisitions/transfer	273,210	680,284
Disposals	(4,640)	(32,578)
Loss on valuation through other comprehensive income (before income tax effects)	(222,998)	(51,355)
Gain (loss) on valuation through profit or loss	15,535	(4,761)
Exchange differences on translation of foreign operations	2,943	4,018
Ending balance	<u>1,022,110</u>	<u>958,060</u>

(*) The Group has entered into a Put-Option agreement regarding its equity investment for Volta Energy Solutions S.a.r.l for the purpose of guaranteeing the principal amount of investments. The main conditions of the Put-Option agreement are as follows:

Category	Details
Exercise date	For three years from the date on which three years lapse since it was acquired (Date of initial investment: January 27, 2021)
Exercise price	Investment amount deducting dividends (received from the time of investment to the time of exercise) from the investment
Other conditions	Put-option cannot be exercised in case Volta Energy Solutions S.a.r.l is listed

During the years ended December 31, 2023 and 2022, the Group did not recognize impairment for other financial assets.

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9. INVENTORIES:

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

(In millions of Korean won)

	December 31, 2023		
	Gross amount	Valuation allowance	Carrying amount
Merchandise	487,525	(33,453)	454,072
Finished/Semifinished products	5,217,031	(256,599)	4,960,432
Work in process	18,443	-	18,443
Raw materials	2,565,721	(81,448)	2,484,273
Supplies	341,616	-	341,616
Materials in transit	1,116,491	-	1,116,491
Total	9,746,827	(371,500)	9,375,327

(In millions of Korean won)

	December 31, 2022		
	Gross amount	Valuation allowance	Carrying amount
Merchandise	379,412	(29,242)	350,170
Finished/Semifinished products	7,186,610	(333,643)	6,852,967
Work in process	32,439	-	32,439
Raw materials	3,004,491	(44,344)	2,960,147
Supplies	307,117	-	307,117
Materials in transit	1,377,791	-	1,377,791
Total	12,287,860	(407,229)	11,880,631

During the year ended December 31, 2023, the cost of inventories recognized as expense and included in 'cost of sales' amounted to ₩35,050,827 million (2022: ₩32,563,619 million).

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10. INVESTMENTS IN ASSOCIATES AND JOINT VENTURES:

Changes in investments in associates and joint ventures for the years ended December 31, 2023 and 2022, are as follows:

(in millions of
Korean won)

	December 31, 2023							
	Beginning balance	Acquisitions / transfer	Dividends	Share of profit (loss) of associates and joint ventures	Share of other comprehensive income (loss) of associates and joint ventures	Impairment /disposals	Others	Ending balance
TECHWIN Co., Ltd.	16,526	-	-	(242)	-	-	-	16,284
SEETEC Co., Ltd	134,482	-	(5,000)	9,187	-	-	(521)	138,148
LG Life Sciences Poland Ltd.	17	-	-	-	-	-	-	17
HUAJIN NEW ENERGY MATERIALS(QUZHOU)C O., LTD.	81,179	-	-	(1,612)	(184)	-	-	79,383
VINFAST LITHIUM BATTERY PACK LIMITED LIABILITY COMPANY ¹	2,428	-	-	(482)	65	(2,011)	-	-
Jiangxi VL Battery Co., Ltd ²	13,323	-	-	(1,317)	543	(12,549)	-	-
PT.HLI Green Power Sam-a Aluminium Company, Limited	187,945	-	-	(29,606)	3,934	-	-	162,273
NEXPO Co., Ltd	-	46,575	-	(318)	-	-	-	46,257
Bricks Capital Management Global Battery Private Equity Fund I	-	2,375	-	(189)	-	-	-	2,186
TL Chemical CO., Ltd	-	13,381	-	(538)	-	-	-	12,843
LG Toray Hungary Battery Separator Kft.	47,816	-	-	1,387	-	-	-	49,203
KOREA PRECURSOR CO., LTD.	445,999	-	-	(7,025)	20,834	-	(8,400)	451,408
	19,838	30,576	-	(2,556)	(156)	-	(98)	47,604
	<u>949,553</u>	<u>92,907</u>	<u>(5,000)</u>	<u>(33,311)</u>	<u>25,036</u>	<u>(14,560)</u>	<u>(9,019)</u>	<u>1,005,606</u>

¹ During the year ended December 31, 2023, the Group disposed 100% ownership shares of VINFAST LITHIUM BATTERY PACK LLC.

² During the year ended December 31, 2023, the Group disposed 100% ownership shares of Jiangxi VL Battery Co., Ltd.

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	December 31, 2022							Ending balance
	Beginning balance	Acquisitions / transfer	Dividends	Share of profit (loss) of associates and joint ventures	Share of other comprehensive income (loss) of associates and joint ventures	Impairment /disposals	Others	
VINA Plasticizers Chemical Co., Ltd. ¹	12,822	-	-	2,239	1,761	-	(16,822)	-
TECHWIN Co., Ltd.	19,024	-	-	(2,447)	(51)	-	-	16,526
SEETEC Co., Ltd	134,843	-	(5,000)	4,946	-	-	(307)	134,482
LG Chem BRASIL INTERMEDIACAO DE NEGOCIOS DO SETOR QUIMICO LTDA.	579	-	-	-	-	-	(579)	-
LG Chem Malaysia SDN.BHD	150	-	-	-	-	-	(150)	-
LG Life Sciences Poland Ltd.	17	-	-	-	-	-	-	17
HUAJIN NEW ENERGY MATERIALS(QUZHOU)C O., LTD.	93,835	-	-	(8,879)	(3,777)	-	-	81,179
VINFAST LITHIUM BATTERY PACK LIMITED LIABILITY COMPANY	3,769	-	-	(1,611)	270	-	-	2,428
Jiangxi VL Battery Co., Ltd	20,310	-	-	(6,820)	(167)	-	-	13,323
PT.HLI Green Power	201,488	-	-	(28,210)	14,667	-	-	187,945
TL Chemical CO., Ltd	48,473	-	-	(657)	-	-	-	47,816
LG Toray Hungary Battery Separator Kft.	-	445,628	-	(4,334)	4,705	-	-	445,999
KOREA PRECURSOR CO., LTD.	-	20,384	-	(442)	(104)	-	-	19,838
	<u>535,310</u>	<u>466,012</u>	<u>(5,000)</u>	<u>(46,215)</u>	<u>17,304</u>	<u>-</u>	<u>(17,858)</u>	<u>949,553</u>

¹ During the year ended December 31, 2022, the company reclassified the shares of VINA Plasticizers Chemical Co., Ltd. amounting to ₩16,822 million as assets held for sale and during the year ended December 31, 2023 disposed the whole ownership interests.

Summarized financial information of associates and joint ventures as of December 31, 2023 and 2022, is disclosed in Note 1.3 and Note 1.4.

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The tables below provide a reconciliation of the summarized financial information presented to the carrying amount of its interest in the joint ventures or associates:

<i>(in millions of Korean won)</i>	December 31, 2023					
	Net Asset (a)	Group's share in % (b)	Group's share in KRW (a x b)	Investment difference	Intercompany transactions, etc.	Carrying amount
HUAJIN NEW ENERGY MATERIALS(QUZHOU) CO., LTD.	163,773	49	80,249	-	(866)	79,383
SEETEC Co., Ltd.	283,236	50	141,618	(3,470)	-	138,148
LG Toray Hungary Battery Separator Kft.	776,928	50	388,464	71,344	(8,400)	451,408
PT.HLI Green Power	434,608	50	217,304	-	(55,030)	162,274

<i>(in millions of Korean won)</i>	December 31, 2022					
	Net Asset (a)	Group's share in % (b)	Group's share in KRW (a x b)	Investment difference	Intercompany transactions, etc.	Carrying amount
HUAJIN NEW ENERGY MATERIALS(QUZHOU) CO., LTD.	167,236	49	81,946	-	(767)	81,179
SEETEC Co., Ltd.	276,826	50	138,412	(3,470)	(460)	134,482
LG Toray Hungary Battery Separator Kft.	749,309	50	374,655	71,344	-	445,999
PT.HLI Green Power	440,626	50	220,313	-	(32,368)	187,945

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11. PROPERTY, PLANT AND EQUIPMENT:

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

(in millions of Korean won)	December 31, 2023											
	Land	Buildings	Structures	Machinery	Vehicles	Tools	Equipment	Others	Right-of-use assets	Construction- in-progress	Machinery -in-transit	Total
Beginning												
balance	1,964,418	6,930,290	1,346,398	10,955,576	14,990	962,987	441,803	276,578	465,499	6,176,195	128,009	29,662,743
Cost	2,001,370	8,272,652	2,181,125	25,948,544	45,823	2,201,510	848,431	678,499	721,164	6,258,282	128,009	49,285,409
Accumulated depreciation	-	(1,297,878)	(803,560)	(14,821,068)	(30,726)	(1,231,443)	(403,726)	(395,840)	(255,665)	-	-	(19,239,906)
Accumulated impairment	(36,952)	(44,484)	(31,167)	(171,900)	(107)	(7,080)	(2,902)	(6,081)	-	(82,087)	-	(382,760)
Business combination (Note 37)	-	-	-	-	-	-	250	-	685	-	-	935
Acquisitions/ transfer	43,533	1,301,908	130,744	3,412,747	5,146	412,672	179,234	181,691	316,549	12,934,877	245,284	19,164,385
Disposals/ transfer	(6,657)	(4,960)	(3,319)	(259,197)	(1,109)	(29,407)	(4,201)	(5,502)	(86,718)	(5,967,538)	(118,933)	(6,487,541)
Exchange differences	8,321	213,817	10,736	221,150	1,527	21,257	6,092	1,973	(6,566)	19,229	-	497,536
Depreciation	-	(230,613)	(84,874)	(2,520,521)	(4,052)	(314,547)	(124,393)	(156,801)	(119,937)	-	-	(3,555,738)
Impairment/ Reversal of impairment	-	(4,761)	(1,746)	(64,856)	(323)	(4,138)	(312)	-	-	(125,203)	-	(201,339)
Transfer to non-current assets held for sale	-	(41,164)	(572)	(67,022)	(88)	(12,534)	(1,744)	-	(7,431)	(33)	-	(130,588)
Ending												
balance	<u>2,009,615</u>	<u>8,164,517</u>	<u>1,397,367</u>	<u>11,677,877</u>	<u>16,091</u>	<u>1,036,290</u>	<u>496,729</u>	<u>297,939</u>	<u>562,081</u>	<u>13,037,527</u>	<u>254,360</u>	<u>38,950,393</u>
Cost	2,011,770	9,745,059	2,312,914	28,492,355	56,626	2,452,297	985,788	539,643	912,058	13,234,185	254,360	60,997,055
Accumulated depreciation	-	(1,533,806)	(883,066)	(16,603,890)	(40,243)	(1,407,081)	(486,032)	(235,623)	(349,977)	-	-	(21,539,718)
Accumulated impairment	(2,155)	(46,736)	(32,481)	(210,588)	(292)	(8,926)	(3,027)	(6,081)	-	(196,658)	-	(506,944)

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(in millions of Korean won)	December 31, 2022											
	Land	Buildings	Structures	Machinery	Vehicles	Tools	Equipment	Others	Right-of-use assets	Construction in progress	Machinery in transit	Total
Beginning												
balance	1,851,637	5,444,946	1,275,184	10,357,706	13,211	771,272	262,375	185,957	377,209	3,745,602	93,160	24,378,259
Cost	1,888,589	6,604,140	2,048,100	23,410,612	41,694	1,840,714	605,971	490,049	535,460	3,828,841	93,160	41,387,330
Accumulated depreciation	-	(1,114,990)	(742,272)	(12,904,400)	(28,388)	(1,064,130)	(340,646)	(298,174)	(158,226)	-	-	(16,651,226)
Accumulated impairment	(36,952)	(44,204)	(30,644)	(148,506)	(95)	(5,312)	(2,950)	(5,918)	(25)	(83,239)	-	(357,845)
Business combination (Note 37)	-	-	167	2,464	-	-	3	-	4,617	-	-	7,251
Acquisitions/ transfer	154,638	1,741,647	164,047	3,029,289	6,004	491,589	276,401	215,170	223,816	8,964,447	143,651	15,410,699
Disposals/ transfer	(31,738)	(21,197)	(7,703)	(46,556)	(105)	(26,393)	(2,594)	(2,891)	(72,397)	(6,517,021)	(108,802)	(6,837,397)
Exchange differences	(250)	(43,602)	(4,934)	(104,966)	(124)	(6,229)	(3,459)	-	38,853	(14,242)	-	(138,953)
Depreciation	-	(189,704)	(79,011)	(2,247,581)	(3,855)	(264,233)	(90,652)	(121,495)	(106,599)	-	-	(3,103,130)
Impairment	-	(1,219)	(895)	(33,313)	(141)	(2,898)	(175)	(163)	-	-	-	(38,804)
Reversal of impairment	-	-	-	705	-	-	-	-	-	4	-	709
Transfer to non-current assets held for sale	(9,869)	(581)	(457)	(2,172)	-	(121)	(96)	-	-	(2,595)	-	(15,891)
Ending												
balance	<u>1,964,418</u>	<u>6,930,290</u>	<u>1,346,398</u>	<u>10,955,576</u>	<u>14,990</u>	<u>962,987</u>	<u>441,803</u>	<u>276,578</u>	<u>465,499</u>	<u>6,176,195</u>	<u>128,009</u>	<u>29,662,743</u>
Cost	2,001,370	8,272,652	2,181,125	25,948,544	45,823	2,201,510	848,431	678,499	721,164	6,258,282	128,009	49,285,409
Accumulated depreciation	-	(1,297,878)	(803,560)	(14,821,068)	(30,726)	(1,231,443)	(403,726)	(395,840)	(255,665)	-	-	(19,239,906)
Accumulated impairment	(36,952)	(44,484)	(31,167)	(171,900)	(107)	(7,080)	(2,902)	(6,081)	-	(82,087)	-	(382,760)

During the year ended December 31, 2023, the Group capitalized ₩91,116 million of borrowing costs (2022: ₩20,061 million) in relation to acquisition of property, plant and equipment, on property, plant and equipment. The capitalization rate of borrowings used to determine the amount of borrowing costs eligible for capitalization is 3.47% (2022: 1.66%).

Line items, including depreciation in the consolidated statements of profit or loss for the years ended December 31, 2023 and 2022, are as follows:

(In millions of Korean won)	2023	2022
Cost of sales	3,167,121	2,782,087
Selling and administrative expenses	358,156	287,071
Others	383	1,148
Discontinued operations	30,078	32,824
Total	<u>3,555,738</u>	<u>3,103,130</u>

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Lease

(i) Amounts recognized in the consolidated statement of financial position

The consolidated statement of financial position shows the following amounts relating to leases:

<i>(In millions of Korean won)</i>	December 31, 2023	December 31, 2022
Right-of-use assets ¹		
Real-estate	479,818	382,714
Machinery	43,631	50,078
Vehicles	35,853	29,935
Tools	1,765	2,204
Equipment	1,013	568
	<u>562,080</u>	<u>465,499</u>

¹ Included in the line item 'property, plant and equipment' in the consolidated statements of financial position.

Additions to the right-of-use assets during the year ended December 31, 2023, were ₩317,234 million (2022: ₩228,433 million).

<i>(In millions of Korean won)</i>	December 31, 2023	December 31, 2022
Lease liabilities ¹		
Current	100,130	95,079
Non-current	391,736	294,559
	<u>491,866</u>	<u>389,638</u>

¹ Included in the line item 'borrowings' in the consolidated statements of financial position.

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(ii) Amounts recognized in the consolidated statement of profit or loss

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

<i>(In millions of Korean won)</i>	2023	2022
Depreciation of right-of-use assets		
Real-estate	92,801	79,287
Machinery	5,888	6,950
Vehicles	19,295	17,914
Tools	1,673	2,055
Equipment	280	393
	<u>119,937</u>	<u>106,599</u>
Interest expense relating to lease liabilities (included in finance cost)	10,937	9,495
Expense relating to short-term leases (included in cost of goods sold and administrative expenses)	36,014	27,475
Expense relating to leases of low-value assets that are not short-term leases (included in cost of goods sold and administrative expenses)	19,083	15,084

The total cash outflow for leases during the year ended December 31, 2023, was ₩186,335 million (2022: ₩147,857 million).

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12. INTANGIBLE ASSETS:

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

<i>(in millions of Korean won)</i>	December 31, 2023						
	Development costs	Software	Industrial property rights	Goodwill	Memberships	Others	Total
Beginning balance	43,657	858,262	708,037	786,378	34,667	259,202	2,690,203
Business combination (Note 37)	-	-	-	275,857	-	565,448	841,305
Acquisitions/transfer	557	435,596	130,025	-	5,392	22,056	593,626
Disposals/transfer	-	(6,869)	(40,692)	-	(1,192)	(581)	(49,334)
Exchange differences	-	8,745	19,407	16,648	(2)	30,498	75,296
Amortization	(8,145)	(250,961)	(71,106)	-	-	(67,984)	(398,196)
Impairment	(347)	(266)	(3,419)	-	-	(713)	(4,745)
Transfer to assets held for sale (Note 34)	(538)	(110)	(19,594)	(17,709)	-	(17,282)	(55,233)
Ending balance	35,184	1,044,397	722,658	1,061,174	38,865	790,644	3,692,922

<i>(in millions of Korean won)</i>	2022						
	Development costs	Software	Industrial property rights	Goodwill	Memberships	Others	Total
Beginning balance	49,950	632,045	641,366	803,924	35,120	281,898	2,444,303
Business combination (Note 37)	-	1,504	-	-	-	-	1,504
Acquisitions/ transfer	87	436,564	133,995	-	13,965	13,997	598,608
Disposals/transfer	-	(22,879)	(2,509)	-	(15,712)	(394)	(41,494)
Exchange differences	-	1,936	1,028	1,452	1,294	(1,505)	4,205
Amortization	(6,106)	(190,779)	(65,781)	-	-	(28,255)	(290,921)
Impairment	(274)	(125)	(62)	(18,998)	-	(6,539)	(25,998)
Transfer to assets held for sale (Note 34)	-	(4)	-	-	-	-	(4)
Ending balance	43,657	858,262	708,037	786,378	34,667	259,202	2,690,203

Line items, including amortization of intangible assets for the years ended December 31, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Cost of sales	61,995	55,208
Selling and administrative expenses	322,253	220,995
Discontinued operations	13,948	14,718
Total	398,196	290,921

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The Group recognized total research and development costs of ₩2,033,290 million (2022: ₩ 1,764,788 million) as expenses.

Details of greenhouse gas emission permits included in other intangible assets are as follows:

Greenhouse gas emission permits held for the purpose of fulfilling obligations

The number of greenhouse gas emission permits received at free of charge for the 3rd planning period (2021 to 2025) is as follows:

<i>(in thousands of tons)</i>	2021	2022	2023	2024	2025	Total
Allocation with nil consideration	9,836	10,460	9,368	9,233	9,233	48,130

Changes in greenhouse gas emission permits during the years ended December 31, 2023 and 2022, are as follows:

<i>(in thousands of tons and millions of Korean won)</i>	2023.12.31							
	2020		2021		2022		2023	
	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Beginning balance								
/Allocation with nil consideration	8,376	-	9,836	-	10,460	-	9,368	-
Purchase/Sale	(69)	1,111	(216)	(20)	(731)	179	(316)	-
Exchange	100	-	(100)	-	-	-	-	-
Issuance of offset emission permits	-	-	-	-	-	-	-	-
Borrowings/Carry forwards between years	(49)	(388)	(379)	388	(781)	-	1,209	-
Surrendered to the government	(8,358)	(723)	(9,141)	(368)	(8,948)	(179)	-	-
Ending balance	-	-	-	-	-	-	10,261	-

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<i>(in thousands of tons and millions of Korean won)</i>	2023.12.31					
	2024		2025		Total	
	Quantity	Amount	Quantity	Amount	Quantity	Amount
Beginning balance /						
Allocation with nil consideration	9,233	-	9,233	-	56,506	-
Purchase/Sale	-	-	-	-	(1,332)	1,270
Exchange	-	-	-	-	-	-
Issuance of offset emission permits	-	-	-	-	-	-
Borrowings/Carry forwards between years	-	-	-	-	-	-
Surrendered to the government	-	-	-	-	(26,447)	(1,270)
Ending balance	9,233	-	9,233	-	28,727	-

<i>(in thousands of tons and millions of Korean won)</i>	2022.12.31							
	2020		2021		2022		2024	
	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Beginning balance /								
Allocation with nil consideration	8,666	-	10,113	-	9,417	-	9,417	-
Purchase/Sale	(69)	1,111	(285)	(20)	(249)	-	-	-
Exchange	100	-	(100)	-	-	-	-	-
Issuance of offset emission permits	-	-	-	-	119	-	-	-
Borrowings/Carry forwards between years	(49)	(388)	(392)	388	441	-	-	-
Surrendered to the government	(8,648)	(723)	(9,336)	(368)	-	-	-	-
Ending balance	-	-	-	-	9,728	-	9,417	-

<i>(in thousands of tons and millions of Korean won)</i>	2022.12.31					
	2024		2025		Total	
	Quantity	Amount	Quantity	Amount	Quantity	Amount
Beginning balance /						
Allocation with nil consideration	9,329	-	9,329	-	56,271	-
Purchase/Sale	-	-	-	-	(603)	1,091
Exchange	-	-	-	-	-	-
Issuance of offset emission permits	-	-	-	-	119	-
Borrowings/Carry forwards between years	-	-	-	-	-	-
Surrendered to the government	-	-	-	-	(17,984)	(1,091)
Ending balance	9,329	-	9,329	-	37,803	-

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During the years ended December 31, 2023 and 2022, there are no greenhouse gas emission permits held for short-term trading purposes.

Details of Greenhouse gas emission permits included in other intangible assets of consolidated financial statements regarding the EU ETS(Emissions Trading System) are as follows:

<i>(in thousands of tons and millions of Korean won)</i>	2023		2022	
	Quantity	Amount	Quantity	Amount
Beginning balance	87	8,002	-	-
Increase	170	16,875	121	11,794
used	(104)	(11,068)	(34)	(3,792)
Ending balance	<u>153</u>	<u>13,809</u>	<u>87</u>	<u>8,002</u>

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Goodwill is allocated to the Group's CGUs identified for each operating segment. The carrying amounts of goodwill allocation by CGUs as of December 31, 2023 and 2022, are as follows:

<i>(in millions of Korean won)</i>	December 31, 2023							Total
	Acquisition of NanoH2O Co., Ltd.	Acquisition of FarmHannong Co., Ltd.	Acquisition of LG Life Sciences, Ltd.	Acquisition of Uniseal, Inc.	Acquisition of CEM business ⁴	Others ³	Acquisition of Aveo Pharmaceuticals, Inc.	
Petrochemicals								
ABS ¹	-	-	-	-	-	17,010	-	17,010
PO	-	-	-	-	-	472	-	472
PVC	-	-	-	-	-	1,234	-	1,234
Acrylic	-	-	-	-	-	819	-	819
SAP	-	-	-	-	-	25,708	-	25,708
Plasticizer	-	-	-	-	-	87	-	87
BPA	-	-	-	-	-	280	-	280
Others	-	-	-	-	-	2,683	-	2,683
Advanced Materials								
RO ¹	110,892	-	-	-	-	-	-	110,892
Separator	-	-	-	-	160,577	-	-	160,577
VCF	-	-	-	-	5,183	-	-	5,183
Uniseal Adhesive ¹	-	-	-	52,342	-	-	-	52,342
Life Sciences								
Life sciences	-	-	391,311	-	-	-	-	391,311
AVEO ^{1,2}	-	-	-	-	-	-	289,485	289,485
Common and others								
FarmHannong Co., Ltd.	-	3,091	-	-	-	-	-	3,091
Total	110,892	3,091	391,311	52,342	165,760	48,293	289,485	1,061,174

¹ Included changes resulting from foreign currency translation.

² During the year ended December 31, 2023, recognized goodwill related to Aveo Pharmaceuticals, Inc. acquisition.

³ During the year ended December 31, 2023, reallocated goodwill related to LG Petrochemicals merger due to the organizational restructuring.

⁴ During the year ended December 31, 2023, distinguished goodwill related to the acquisition of the SAP business unit due to organizational restructuring.

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(in millions of Korean won)	December 31, 2022						
	Acquisition of NanoH2O Co., Ltd.	Acquisition of FarmHannong Co., Ltd.	Acquisition of LG Life Sciences, Ltd.	Acquisition of Uniseal, Inc.	Acquisition of CEM business	Others	Total
Petrochemicals							
NCC	-	-	-	-	-	-	-
ABS ¹	-	-	-	-	-	17,867	17,867
PO	-	-	-	-	-	1,092	1,092
PVC	-	-	-	-	-	1,271	1,271
Acrylic	-	-	-	-	-	25,817	25,817
Plasticizer	-	-	-	-	-	89	89
BPA	-	-	-	-	-	495	495
Others	-	-	-	-	-	1,712	1,712
Advanced Materials							
RO ¹	108,814	-	-	-	-	-	108,814
Separator ^{1,3}	-	-	-	-	178,191	-	178,191
VCF ³	-	-	-	-	5,183	-	5,183
Prism ^{2,3}	-	-	-	-	-	-	-
Life Sciences							
Life sciences	-	-	391,311	-	-	-	391,311
Common and others							
FarmHannong Co., Ltd.	-	3,091	-	-	-	-	3,091
Adhesive ¹	-	-	-	51,445	-	-	51,445
Total	108,814	3,091	391,311	51,445	183,374	48,343	786,378

¹ Included changes resulting from foreign currency translation.

² During the year ended December 31, 2022, the Group recognized ₩18,998 million of impairment against goodwill allocated to Prism Sheet business acquired due to the acquisition of CEM business.

³ Goodwill related to CEM business acquired in the prior year has been allocated to the relevant CGUs during the year ended December 31, 2022.

The recoverable amount of the CGU was determined based on the fair value less the value in use or cost of disposal (net fair value). The value in use was calculated using estimated pretax cash flows over a period of five years based on the business plan approved by the management and was determined based on past performance and market growth.

Net fair value was evaluated by an independent assessor with certified professional qualifications, reflecting public notification of the value of land and recently available similar transaction price, etc., and this is classified as Fair Value Hierarchy Level 3.

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During 2023, key assumptions used for calculation of value in use and fair value less cost of disposal are as follows:

(In millions of Korean won)

	2023	
	Pretax discount rate	Growth rate for subsequent years after five years
RO filter	13.7%	1.0%
FarmHannong	9.0%	0.0%
LG Life Sciences	10.6%	3.0%
Uniseal, Inc.(Adhesives)	14.7%	2.0%
ABS	9.9%	0.0%
Separator	12.5%	1.0%
VCF	19.2%	2.0%
AVEO	13.6%	0.0%

Impairment test on intangible assets other than goodwill

The impairment losses for intangible assets other than goodwill that the Group recognized the year ended December 31, 2022, are as follows:

(In millions of Korean won)

	2022			
	Development costs	Industrial property rights	Other intangible assets	Total
Acquisition of Prism	-	-	6,539	6,539
	<u>-</u>	<u>-</u>	<u>6,539</u>	<u>6,539</u>

13. OTHER CURRENT AND NON-CURRENT ASSETS:

Details of other current and non-current assets as of December 31, 2023 and 2022, are as follows:

(In millions of Korean won)

	2023	2022
Current		
Prepayments to suppliers and prepaid expenses	348,182	455,013
Prepaid value-added tax	287,977	293,627
Others	575,215	264,823
Total	<u>1,211,374</u>	<u>1,013,463</u>
Non-current		
Net defined benefit assets	494,818	618,049
Long-term prepayments and long-term prepaid expenses	279,407	143,876
Others	146	138
Total	<u>774,371</u>	<u>762,063</u>

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14. BORROWINGS:

Borrowings as of December 31, 2023 and 2022, consist of:

<i>(In millions of Korean won)</i>	2023	2022
Current		
Short-term borrowings	1,875,362	1,402,367
Current portion of long-term borrowings of bank loans	1,470,152	921,928
Current portion of debentures	3,632,138	1,384,993
Finance lease liabilities	100,130	95,079
	<u>7,077,782</u>	<u>3,804,367</u>
Non-current		
Long-term borrowings	6,330,484	5,285,629
Debentures	8,128,112	6,579,964
Lease liabilities	391,736	294,559
	<u>14,850,332</u>	<u>12,160,152</u>
Total	<u>21,928,114</u>	<u>15,964,519</u>

Details of general borrowings as of December 31, 2023, are as follows:

<i>(In millions of Korean won)</i>	Currency	Bank	Latest maturity date	Interest rate (%) as of December 31, 2023				
					2023		2022	
					Current	Non-current	Current	Non-current
Short-term borrowings								
Bank loans	Foreign currency	CITI Bank and others	2024.11.24	6.62 and others	1,875,362	-	1,402,367	-
Total					<u>1,875,362</u>	<u>-</u>	<u>1,402,367</u>	<u>-</u>
Long-term borrowings								
Bank loans	Korean won	KDB Bank and others	2028.11.01	3.05 and others	200,000	505,000	-	500,000
	Foreign currency	RHB and others	2031.12.15	3M EURIBOR+ 0.89 and others	1,270,249	5,825,873	921,928	4,786,280
					(97)	(389)	-	(651)
					<u>1,470,152</u>	<u>6,330,484</u>	<u>921,928</u>	<u>5,285,629</u>
Total								
Debentures								
Public debentures	Korean won	KB Securities Co., Ltd. and others	2036.02.19	3.73 and others	990,000	4,400,000	710,000	3,540,000
Private debentures	Korean won	KB Securities Co., Ltd. and others	2036.05.07	2.39 and others	-	150,000	-	150,000
	Foreign currency	CITI Securities and others	2031.07.07	5.75 and others	644,700	3,610,320	675,600	2,914,790
Exchangeable bonds	Foreign currency	CITI Securities and others	2030.07.18	1.60 and others	2,578,800	-	-	-
					(581,362)	(32,208)	(607)	(24,826)
Total					<u>3,632,138</u>	<u>8,128,112</u>	<u>1,384,993</u>	<u>6,579,964</u>

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1) The details of newly issued exchangeable bonds (Tranche 1) during the year ended December 31, 2023, are as follows:

Category	Details
Aggregate principal amount	USD 1,000,000,000
Issue price	USD 1,000,000,000
Interest rate	1.25
Issue Date	July 18, 2023
Maturity Date	July 18, 2028
Principal Repayment Method	Maturity repayment: Lump-sum repayment at maturity of the remaining principal and interest of debentures that have been repaid early by maturity or for which the right of exchange has not been exercised. Early redemption: The Parent Company has the Call Option, and the bondholder has the Put Option.
Exchange Target	1,883,636 common shares of LG Energy Solution, Ltd. However, despite the bondholder's exercise of the exchange right, the issuer has the option to settle by paying cash equivalent to the consideration instead of issuing the target shares.
Exchange Price (KRW/share)	687,500 (23.07.11 closing price X premium 125%) However, the exchange price may be adjusted according to the standards set in the investment prospectus, such as when the target company pays stock dividends.
Claim Period	August 28, 2023 – July 11, 2028
Early Redemption at the Option of the Issuer	1) After three years and 14 days from the date of payment, if there are more than 20 trading days out of 30 consecutive trading days when the stock price (based on closing price) is 130% or more of the exchange price based on U.S. dollar conversion. 2) When the outstanding principal is less than 10% of the original debt (Clean Up Call) 3) When additional tax burden arises due to revision of related laws, etc.
Early Redemption at the Option of the Bondholders	1) Can be exercised on 2025.07.18 (Optional Put Date) 2) When Shares cease to be listed or admitted to trading or are suspended for a period equal to or exceeding 30 consecutive Trading Days on the Relevant Stock Exchange 3) When there is a change in control of the company or the issuer of stocks subject to exchange (Change of Control) 4) When the issuer acquires more than 85% of the Voting Rights of the issued share capital of LG Energy Solution (Free Float)

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2) The details of newly issued exchangeable bonds (Tranche 2) during the year ended December 31, 2023, are as follows:

Category	Details
Aggregate principal amount	USD 1,000,000,000
Issue price	USD 1,000,000,000
Interest rate	1.60
Issue Date	July 18, 2023
Maturity Date	July 18, 2030
Principal Repayment Method	Maturity repayment: Lump-sum repayment at maturity of the remaining principal and interest of debentures that have been repaid early by maturity or for which the right of exchange has not been exercised. Early redemption: The Parent Company has the Call Option, and the bondholder has the Put Option.
Exchange Target	1,811,188 common shares of LG Energy Solution, Ltd. However, despite the bondholder's exercise of the exchange right, the issuer has the option to settle by paying cash equivalent to the consideration instead of issuing the target shares.
Exchange Price (KRW/share)	715,000 (23.07.11 closing price X premium 130%) However, the exchange price may be adjusted according to the standards set in the investment prospectus, such as when the target company pays stock dividends.
Claim Period	August 28, 2023 – July 11, 2030
Early Redemption at the Option of the Issuer	1) After five years and 14 days from the date of payment, if there are more than 20 trading days out of 30 consecutive trading days when the stock price (based on closing price) is 130% or more of the exchange price based on U.S. dollar conversion. 2) When the outstanding principal is less than 10% of the original debt (Clean Up Call) 3) When additional tax burden arises due to revision of related laws, etc.
Early Redemption at the Option of the Bondholders	1) Can be exercised on 2027.07.18 (Optional Put Date) 2) When Shares cease to be listed or admitted to trading or are suspended for a period equal to or exceeding 30 consecutive Trading Days on the Relevant Stock Exchange 3) When there is a change in control of the company or the issuer of stocks subject to exchange (Change of Control) 4) When the issuer acquires more than 85% of the Voting Rights of the issued share capital of LG Energy Solution (Free Float)

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3) Details of the exchangeable bonds (Tranche 1) as of the date of issuance and as of December 31, 2023, are as follows:

<i>(In millions of Korean won)</i>	July 18, 2023	December 31, 2023
Issue price	₩ 1,266,100	₩ 1,289,400
Book amount of exchangeable bonds	991,756	1,039,166
Derivative financial liabilities	<u>263,532</u>	<u>246,994</u>

4) Details of the exchangeable bonds (Tranche 2) as of the date of issuance and as of December 31, 2023, are as follows:

<i>(In millions of Korean won)</i>	July 18, 2023	December 31, 2023
Issue price	₩ 1,266,100	₩ 1,289,400
Book amount of exchangeable bonds	914,412	959,257
Derivative financial liabilities	<u>340,876</u>	<u>254,957</u>

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

<i>(In millions of Korean won)</i>	December 31, 2023				
Leaser	Annual interest rate (%)	Latest maturity date	Total amount	Current	Non-current
Hyundai Oil Bank and others	0.67–8.68	2082.2.28	491,866	100,130	391,736

<i>(In millions of Korean won)</i>	December 31, 2022				
Leaser	Annual interest rate (%)	Latest maturity date	Total amount	Current	Non-current
Hyundai Oil Bank and others	0.67–8.68	2082.2.28	389,638	95,079	294,559

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15. PROVISIONS:

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

(In millions of Korean won)

	December 31, 2023			
	Warranty¹	Greenhouse gas emission²	Others³	Total
Beginning balance	1,485,978	8,712	65,170	1,559,860
Additions	771,185	11,501	134,171	916,857
Used	(977,703)	(11,247)	(53,042)	(1,041,992)
Ending balance	<u>1,279,460</u>	<u>8,966</u>	<u>146,299</u>	<u>1,434,725</u>
Current	413,309	8,966	124,675	546,950
Non-current	866,151	-	21,624	887,775

(In millions of Korean won)

	December 31, 2022			
	Warranty¹	Greenhouse gas emission²	Others³	Total
Beginning balance	2,110,180	79	99,449	2,209,708
Business Combination (Note 37)	4,999	-	-	4,999
Additions	666,923	12,493	9,136	688,552
Used	(1,296,124)	(3,860)	(43,415)	(1,343,399)
Ending balance	<u>1,485,978</u>	<u>8,712</u>	<u>65,170</u>	<u>1,559,860</u>
Current	971,836	8,712	45,898	1,026,446
Non-current	514,142	-	19,272	533,414

¹ Warranty provisions have been accrued based on historical experience for the estimated warranty costs to be incurred due to quality control, exchange and refunds with regard to products. In addition, provisions related to replacement costs for ESS and voluntary automotive battery recalls are determined based on the best estimate and included in the above warranty provision. The provisions are adjusted to reflect the current best estimate. As of December 31, 2023, the above warranty provision included ₩1,274,438 million of warranty provision for LG Energy Solution, Ltd. and its subsidiaries.

² Greenhouse gas emission provisions have been accrued for estimated expenditures to be obligated for any excess emission. The estimated emission as of December 31, 2023, amounts to 8,854 thousand tons (December 31, 2022: 9,067 thousand tons).

³ The Group has not only set out provisions for partial litigation in progress, but also set out provisions by estimating costs expected to be a burden incurred in operating activities, such as costs related to soil restoration due to soil pollution, etc.

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16. NET DEFINED BENEFIT ASSETS:

Details of net defined benefit assets recognized in the consolidated statements of financial position as of December 31, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	December 31, 2023	December 31, 2022
Present value of defined benefit obligations ¹	1,750,986	1,554,870
Fair value of plan assets	<u>(2,233,925)</u>	<u>(2,153,449)</u>
Assets in the consolidated statement of financial position²	<u>(482,939)</u>	<u>(598,579)</u>

¹ The present value of retirement benefit obligations is net of existing contributions to the National Pension Plan of ₩587 million as of December 31, 2023 (2022: ₩655 million).

² Net defined benefit assets are included in other non-current assets.

The amounts recognized in the consolidated statements of profit or loss for the years ended December 31, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Current service cost ¹	201,505	210,372
Interest cost	<u>(32,008)</u>	<u>(779)</u>
Total, included in employee benefit expenses	<u>169,497</u>	<u>209,593</u>

¹ The above amounts excluded ₩1,500 million (2022: ₩1,365 million) of expenses capitalized to construction in progress and development costs.

Postemployment benefits recognized for defined contribution plan for the year ended December 31, 2023, amounted to ₩17,700 million (2022: ₩11,365 million).

Postemployment benefits recognized in the consolidated statements of profit or loss for the years ended December 31, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Cost of sales	96,434	119,919
Selling and administrative expenses	82,000	90,127
Discontinued operations	<u>8,763</u>	<u>10,913</u>
Total	<u>187,197</u>	<u>220,959</u>

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

<i>(In millions of Korean won)</i>	December 31, 2023	December 31, 2022
Beginning balance	1,554,870	1,616,781
Transferred-in liability due to intercompany transfer	15,195	11,434
Transferred-out liability due to intercompany transfer	(8,849)	(6,334)
Current service cost	203,005	211,737
Interest expense	80,529	46,328
Remeasurements:		
Actuarial loss (gain) from change in demographic assumptions	2,290	(1,210)
Actuarial loss (gain) from change in financial assumptions	12,394	(284,041)
Actuarial loss from experience adjustments	59,020	78,279
Others	(2,303)	459
Exchange differences	(10,294)	(1,108)
Payments from plans	(154,871)	(117,455)
Ending balance	<u>1,750,986</u>	<u>1,554,870</u>

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

<i>(In millions of Korean won)</i>	December 31, 2023	December 31, 2022
Beginning balance	2,153,449	1,643,709
Transferred-out plan assets due to intercompany transfer	(1,356)	(933)
Interest income	112,537	47,107
Remeasurements:		
Return on plan assets (Exclude the amount included in interest revenue)	3,844	(13,380)
Contributions:		
Employers	106,411	586,745
Payments from plans	(137,389)	(107,204)
Administrative costs	(3,571)	(2,595)
Ending balance	<u>2,233,925</u>	<u>2,153,449</u>

The actual return on plan assets for the year ended December 31, 2023, was ₩116,381 million (2022: ₩33,727 million).

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

	December 31, 2023	December 31, 2022
Discount rate	4.5%–4.7%	5.3%–5.6%
Salary growth rate	5.0%–6.0%	6.0%

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The sensitivity analysis for changes in key actuarial assumptions as of December 31, 2023, is as follows:

<i>(In millions of Korean won)</i>	Increase by 0.5%	Decrease by 0.5%
Discount rate:		
Increase (decrease) in defined benefit obligations	(181,508)	216,352
Salary growth rate:		
Increase (decrease) in defined benefit obligations	224,975	(190,983)

The decline in rate of return of the gilt, which is the discount rate, is a key factor leading to an increase in the defined benefit liability.

The above sensitivity analyses are based on a change in an assumption, while holding all other assumptions constant. In practice, this is unlikely to occur, and changes in some of the assumptions may be correlated. The sensitivity of the defined benefit obligation to changes in principal actuarial assumptions is calculated using the projected unit credit method, the same method applied when calculating the defined benefit obligations recognized in the statements of financial position.

The methods and types of assumptions used in preparing the sensitivity analysis did not change compared to the prior period.

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

<i>(In millions of Korean won)</i>	December 31, 2023		December 31, 2022	
	Amount	Composition (%)	Amount	Composition (%)
Insurance contracts with guaranteed yield	2,212,965	99.1	2,142,224	99.5
Equity-linked bonds	20,899	0.9	11,222	0.5
Time deposits	61	0.0	3	0.0
	<u>2,233,925</u>	<u>100.0</u>	<u>2,153,449</u>	<u>100.0</u>

Plan assets consist of various debt instruments with principal and interest protection and others, which have no quoted market prices in an active market.

The weighted-average duration of the defined benefit obligation is 12.29 years.

The Group reviews the funding level on an annual basis and has a policy of eliminating deficit from the fund. Expected contributions to postemployment benefit plans for the year ending December 31, 2024, are ₩325,274 million.

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17. OTHER CURRENT AND NON-CURRENT LIABILITIES:

Details of other current and non-current liabilities as of December 31, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	December 31, 2023	December 31, 2022
Current		
Advances from customers	247,150	232,059
Withholdings	302,890	147,334
Unearned revenues	119,399	149,293
Accrued expenses	477,405	810,768
Total	1,146,844	1,339,454
Non-current		
Long-term accrued expenses	76,000	65,182
Long-term unearned revenues	163,497	224,619
Long-term advanced received	1,279,493	114,544
Total	1,518,990	404,345

18. COMMITMENTS AND CONTINGENCIES:

- As of December 31, 2023, the Parent Company and certain subsidiaries have been guaranteed by Seoul Guarantee Insurance Company for the execution of contracts and others.
- As of December 31, 2023, the Parent Company and certain subsidiaries have various specific line of credit agreements with several financial institutions as follows:

(Unit: Korean won in millions, foreign currencies in millions)

Classification	The Parent Company		Certain Subsidiaries								
	KRW	USD	KRW	USD	CNY	EUR	PLN	INR	THB	MYR	JPY
Limit of bank overdraft	20,400	-	8,700	70	860	343	-	-	10	-	-
Limit of the letter of credit	15,000	278	-	335	2,009	-	-	2,970	-	-	500
Limit of discount of notes from export	-	969	-	1,250	3,200	-	-	-	-	-	-
Limit of guaranteed payments in other foreign currency	-	181	51,600	285	200	-	-	-	-	-	-
Limit of loan arrangements	350,000	-	970,000	7,638	13,915	2,821	155	-	-	450	-
Derivatives	-	-	90,000	1,445	-	220	-	-	-	-	-

The Parent Company and certain subsidiaries also entered into comprehensive credit line agreements with other financial institutions relating to trade finance and import/export (including bank overdraft) amounting to ₩20,000 million and USD 235 million. Certain subsidiaries entered into factoring agreements with a limit of ₩150,000 million and CNY 610 million.

- As of December 31, 2023, the Parent Company and certain subsidiaries have B2B purchase arrangements with several financial institutions with a credit limit of ₩356,000 million and ₩190,000 million, respectively.

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- (4) As of December 31, 2023, the Parent Company has reverse factoring agreements, and there is no utilized amount.
- (5) As of December 31, 2023, the Group's litigation status is as follows:
- i) As of December 31, 2023, in connection with styrene monomer gas leakage accident, several lawsuits against LG Polymer India Pvt. Ltd., a subsidiary, have been filed with National Green Tribunal of India (NGT) and Andhra Pradesh High Court (APHC). The ultimate outcome of these cases cannot be determined at the reporting date. LG Polymer India Pvt. Ltd. deposited INR 500 million under the order from NGT, and deposited INR 953 million generated from sales of inventories under the order from APHC in connection with this accident. The manufacturing facility is currently closed with limited access in accordance with the order from APHC.
 - ii) As of December 31, 2023, in relation to small rechargeable batteries sales and General Motors ("GM") Bolt EV, the consumers have filed five class actions against the Group. However, the ultimate outcome of these cases cannot be determined at the reporting date.
 - iii) In addition, as of December 31, 2023, the Parent Company and certain subsidiaries have been named as plaintiffs in seven (related claim amount of ₩25,781 million) and 22 (related claim amount of USD 107 million and ₩6,232 million) legal actions, respectively. They have been named as defendants in 14 and 84 legal actions, respectively, with ₩80,624 million and ₩1,112 million, respectively, in claims. The ultimate outcome of these cases cannot be determined at the reporting date.
- (6) The Parent Company has entered into manufacture and production technical contracts with ExxonMobil and others.
- (7) The Parent Company has entered into a license agreement with LG Corp. to use trademarks on the products that the Group manufactures and sells, and on the services the Group provides in relation to its business.
- (8) As of December 31, 2023, the Group has entered into a payment guarantee contract of USD 10 million, and certain subsidiaries have entered into payment guarantee contracts of USD 161 million, EUR 3 million with financial institutions to guarantee the warrant of products and payment. Certain subsidiaries have entered into payment guarantee contracts of CNY 462 million with financial institutions in relation to the custom of imported raw materials.
- (9) Capital expenditure arrangement that has not incur at the end of the reporting period is as follows:

<i>(In millions of Korean won)</i>	December 31, 2023	December 31, 2022
Property, plant and equipment	9,416,171	6,522,401

- (10) As of December 31, 2023, the Group has entered into an agreement with GM regarding joint investment in Ultium Cells Holdings LLC and Ultium Cells LLC, whereby each party can sell its shares to third parties in eight years after the inception of the contract. In addition, if one party defaults, the other party has the right-to-purchase shares from the other party. The Group completed the process of approval by the government for the use of core technologies according to the Industrial Technology Protection Act.

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- (11) As of December 31, 2023, the Group has entered into a joint venture agreement with Honda in which the Group agreed to invest USD 1,802 million. At the end of the current period, a total investment of USD 415 million has been made. Additionally, in the event of default, other equity investors have the right to purchase the applicable interest.
- (12) As of December 31, 2023, the Group has entered into a joint venture agreement with Stellantis in which the Group agreed to invest USD 1,464 million. At the end of the current period, a total investment of USD 459 million has been made. Additionally, in the event of default, other equity investors have the right to purchase the applicable interest.
- (13) As of December 31, 2023, the Group has entered into a joint venture agreement with HMG Global LLC, in which the Group agreed to invest USD 1,108 million. At the end of the current period, a total investment of USD 110 million has been made. Additionally, after the expiration of the contract period, it is possible to transfer the applicable interest to a third party, and in the event of default, other equity investors have the right to purchase the applicable interest.
- (14) As of December 31, 2023, the Group and certain subsidiaries' investment agreements are as follows:

<i>(In millions of Korean won and USD)</i>	Currency	Committed investments	Cumulative investments	Remaining
KBE Fund	KRW	150,000	81,028	68,972
Gross Acceleration Fund	KRW	5,000	4,900	100
BNZ (Beyond Net Zero) Fund	USD	150	50	100
Secondary battery growth Fund	KRW	6,700	5,360	1,340
U.S. Venture Partners XII ¹	USD	5	4	1
U.S. Venture Partners XIII ¹	USD	5	1	4
Phoenix Venture Partners III ¹	USD	10	4	6
Emerald Industrial Innovation Fund IX ¹	EUR	5	1	4
BCM Global Battery Fund	KRW	30,000	8,751	21,249
Yonsei Technology Holdings IP Fund	KRW	3,000	1,020	1,980

¹ Investment agreements of LG Chem Fund I LLC.

- (15) The Parent Company acquired 50% of new shares issued by LG Toray Hungary Battery Separator kft. for USD 375 million in accordance with the joint venture agreement with Toray Industries, Inc. during the ended December 31, 2023. The shares were recognized as investment in associates, as it was determined that there was a joint control under the agreement. The details on agreements entered into upon the acquisition of shares are as follows:

Category	Details
Agreement to purchase additional shares	After 30 months from the acquisition date of the 50% shares, purchasing the 20% shares through the agreed pricing method.
Restrictions on share transfer	- During the lock-up period ¹ , share transfer is prohibited without prior written consent of the other shareholder. - When sold to a third party, the Parent Company holds a drag-along right and Toray Industries, Inc. holds a tag-along right.
Default	In case the Parent Company or the contracting party defaults, non-default shareholder and subsidiaries have the right to request

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	the default shareholder to sell their shares (Call Option) and the default shareholder to purchase the shares held by the non-default shareholder (Put Option).
Exit put option	Once the lock-up period ¹ ends, the other shareholder has a put option to sell the remaining 30% of the shares to the Parent Company.
Deadlock	After 30 months from the acquisition date of the 50% shares, in the event of a deadlock agreed by both parties, 1) the Parent Company holds a call option to request the counterparty's company and affiliates to sell their shares. 2) The other party holds a put option to request the Parent Company to purchase shares of the counterparty.

¹ Lock-up period: Restriction period of share transfer for five years from the time the Parent Company acquires 50% of the shares.

(16) Certain subsidiaries provide payment guarantees amounting to ₩88,711 million for borrowings as of December 31, 2023, the details are as follows:

(In millions of Korean won)

Guarantor	Guaranteed company	Creditor	Amount of borrowing ¹		Guaranteed amount ²	
			December 31, 2023	December 31, 2022	December 31, 2023	December 31, 2022
LG ENERGY SOLUTION, LTD.	PT. HLI Green Power	ANZ and others	285,602	88,711	458,382	450,525

¹ It is the amount of borrowing as of December 31, 2023 and 2022.

² It is a total amount guaranteed.

(17) During the year ended December 31, 2023, the Group issued exchangeable bonds targeting the stocks of LG Energy Solution, LTD., and recognized the right of exchange and option included in the exchangeable bonds as a derivative financial liability (see Note 14).

19. SHARE CAPITAL:

Changes in share capital and share premium for the years ended December 31, 2023 and 2022, are as follows:

(In millions of Korean won and in shares)

	Ordinary shares		Preferred shares		Share premium
	Number of shares	Share capital	Number of shares	Share capital	
January 1, 2022	70,592,343	352,962	7,688,800	38,444	2,014,036
December 31, 2022	70,592,343	352,962	7,688,800	38,444	2,014,036
December 31, 2023	70,592,343	352,962	7,688,800	38,444	2,014,036

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

<i>(In millions of Korean won and in shares)</i>	Number of shares		Carrying amount	Gain on disposal of treasury shares
	Ordinary shares	Preferred shares		
January 1, 2022	367,529	6,041	18,011	463,807
Disposal of treasury shares ¹	<u>(367,529)</u>	<u>-</u>	<u>(17,741)</u>	<u>192,119</u>
December 31, 2022	<u>-</u>	<u>6,041</u>	<u>270</u>	<u>655,926</u>
December 31, 2023	<u>-</u>	<u>6,041</u>	<u>270</u>	<u>655,926</u>

¹ The Group disposed of all of treasury shares of the Parent Company (367,529 shares) on November 23, 2022, as the board of directors' meeting decided to exchange treasury shares of Korea Zinc Company, Ltd. with the treasury shares of the Parent Company.

Capital surplus as of December 31, 2023 and 2022, consists of:

<i>(In millions of Korean won)</i>	December 31, 2023	December 31, 2022
Revaluation reserve	206,769	206,769
Share premium	2,014,036	2,014,036
Gain on disposal of treasury shares	655,927	655,926
Other capital surplus	8,695,366	8,692,825
Total	<u>11,572,098</u>	<u>11,569,556</u>

20. RETAINED EARNINGS:

Retained earnings as of December 31, 2023 and 2022, consist of:

<i>(In millions of Korean won)</i>	December 31, 2023	December 31, 2022
Legal reserve ¹	765,794	674,327
Discretionary reserve ²	16,894,707	14,570,240
Retained earnings before appropriation	<u>1,990,131</u>	<u>3,897,696</u>
Total	<u>19,650,632</u>	<u>19,142,263</u>

¹ The Commercial Code of the Republic of Korea requires the Parent Company to appropriate for each financial period, as a legal reserve, an amount equal to a minimum of 10% of cash dividends paid until such reserve equals 50% of its issued share capital. The reserve is not available for cash dividends payment, but may be transferred to share capital or used to reduce accumulated deficit. When the accumulated legal reserves (the sum of capital reserves and earned profit reserves) are greater than 1.5 times the paid-in capital amount, the excess legal reserves may be distributed in accordance with a resolution of the shareholders' meeting.

² The Parent Company separately accumulates a discretionary reserve for research and human resource development through appropriation of retained earnings, which has been included as deductible expense for the corporate income tax return according to the Special Tax Treatment Law. Among these reserves, the used amounts for each specific purpose and the balances after use can be transferred to discretionary reserve and will be able used for dividends.

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21. OTHER COMPONENTS OF EQUITY:

Details of other components of equity as of December 31, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	December 31, 2023	December 31, 2022
Treasury shares (Note 19)	(270)	(270)
Capital transactions within the Group (*)	(19,299)	(19,299)
Total	<u>(19,569)</u>	<u>(19,569)</u>

(*) Gain or loss on disposal interest within the consolidated entity, changes in ownership interests and the investment difference, etc., all adjusted for the related deferred corporate tax effects.

22. SELLING AND ADMINISTRATIVE EXPENSES:

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

<i>(In millions of Korean won)</i>	2023	2022
Revenue	55,249,785	50,983,251
Cost of sales	46,463,916	41,122,379
Gross profit	8,785,869	9,860,872
Other non-operating income (*)	676,874	-
Selling and administrative expenses	6,933,547	6,881,518
Wages and salaries	1,700,031	1,573,301
Postemployment benefits (Note 16)	82,000	90,127
Employee benefits	367,375	306,000
Travel expense	111,534	84,190
Water and utilities	124,435	95,534
Packaging expense	10,628	13,260
Rental expenses	153,865	150,925
Commission expenses	1,211,585	1,040,023
Depreciation	361,591	290,247
Advertising expense	76,836	48,222
Freight expenses	768,731	1,532,187
Training expense	62,001	48,462
Amortization (Note 12)	322,253	220,995
Sample expense	31,229	24,077
Development costs	474,555	375,702
Others	1,074,898	988,266
Operating profit	<u>2,529,196</u>	<u>2,979,354</u>

(*) Under the Inflation Reduction Act, which takes effect on January 1, 2023, manufacturers and sellers of battery cells/modules produced in the United States are eligible for tax deductions of a certain amount. The amount is the amount of revenue the consolidated company is expected to receive in the current period.

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23. BREAKDOWN OF EXPENSES BY NATURE:

Cost of sales, and selling and administrative expenses by nature for the years ended December 31, 2023 and 2022, consist of:

<i>(In millions of Korean won)</i>	2023	2022
Changes in inventories of merchandise, finished goods, semifinished goods and work in process	1,802,626	(2,548,978)
Raw materials and consumables used	31,785,129	33,292,908
Purchase of merchandise	1,463,072	1,819,689
Employee benefit expenses (Note 24)	4,856,613	4,622,218
Advertising expenses	78,480	49,546
Freight expenses	822,525	1,589,863
Commission expenses	1,953,003	1,746,433
Depreciation and amortization	3,912,960	3,348,537
Rent expenses	111,497	104,701
Other expenses	6,611,558	3,978,980
Total	53,397,463	48,003,897

24. EMPLOYEE BENEFIT EXPENSES:

Details of employee benefit expenses for the years ended December 31, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Salaries	4,017,167	3,881,152
Postemployment benefits – Defined benefit plan	161,250	199,100
Postemployment benefits – Defined contribution plan	17,185	10,946
Others	661,011	531,020
Total	4,856,613	4,622,218

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25. FINANCE INCOME AND COSTS:

Details of finance income and costs for the years ended December 31, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Finance income		
Interest income ¹	316,847	252,456
Dividend income	24,642	1,979
Exchange differences	1,240,996	542,742
Gain related to derivative instruments	181,309	101,115
Gain related to financial instruments	23,451	15,494
Total	<u>1,787,245</u>	<u>913,786</u>
Finance costs		
Interest expense ²	647,232	298,308
Exchange differences	925,585	844,212
Loss related to derivative instruments	71,174	52,487
Loss related to financial instruments	21,274	7,623
Total	<u>1,665,265</u>	<u>1,202,630</u>

¹ Details of interest income for the years ended December 31, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Deposits held by financial institutions	249,879	198,514
Other loans and receivables	66,968	53,942
Total	<u>316,847</u>	<u>252,456</u>

² Details of interest expense for the years ended December 31, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Interest on financial institutions	373,745	102,440
Interest on lease liabilities	10,937	9,495
Interest on debentures	296,384	180,651
Other interest expenses	56,143	19,616
Capitalized interest for qualifying assets	(89,977)	(13,894)
Total	<u>647,232</u>	<u>298,308</u>

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26. OTHER NON-OPERATING INCOME:

Details of other non-operating income for the years ended December 31, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Exchange differences	1,505,673	2,003,741
Gain on disposal of property, plant and equipment	23,770	43,911
Gain on disposal of intangible assets	191	8
Profit from bargain purchase	-	30,674
Insurance income	15,635	131,582
Gain on disposal of business	118,354	61
Others	69,709	37,572
Total	<u>1,733,332</u>	<u>2,247,549</u>

27. OTHER NON-OPERATING EXPENSES:

Details of other non-operating expenses for the years ended December 31, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Exchange differences	1,355,037	1,866,012
Loss on disposal of property, plant and equipment	151,937	77,870
Loss on disposal of intangible assets	31,365	22,460
Impairment loss on property, plant and equipment	199,543	36,645
Impairment loss on intangible assets	4,745	434
Loss on disasters	8,181	27,790
Donations	23,799	21,803
Others	78,450	60,538
Total	<u>1,853,057</u>	<u>2,113,552</u>

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28. DEFERRED INCOME TAX AND INCOME TAX EXPENSE:

Details of income tax expense for the years ended December 31, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Current tax		
Current tax on profit for the years	628,461	903,431
Adjustments recognized in the current period for corporate tax for past periods	77,555	(17,654)
Deferred tax		
Deferred income tax – movement in temporary differences	207,347	359,307
Deferred income tax – changes in Korean tax rate	-	14,185
Deferred income tax – tax credit carryforwards	(351,146)	(173,376)
Deferred income tax – tax loss carryforwards	(241,303)	(340,573)
Total corporate tax expense	320,914	745,320
Deferred tax charged directly to equity	85,599	(49,128)
Current tax charged directly to equity	-	(47,132)
Others (discontinued effect, etc.)	25,988	(11,936)
Income tax expense	<u>432,501</u>	<u>637,124</u>

The aggregate current and deferred taxes charged directly to equity (other comprehensive income) for the years ended December 31, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Current tax		
Gain on disposal of financial assets at fair value through other comprehensive income	-	1
Gain on disposal of treasury shares	-	(47,133)
Total	<u>-</u>	<u>(47,132)</u>
Deferred tax		
Remeasurements of net defined benefit liabilities	16,538	(43,794)
Loss on valuation of derivative instruments	(3)	-
Exchange differences on translation of foreign operations	1,799	(25,712)
Gain on valuation of financial assets at fair value through other comprehensive income	62,071	16,778
Others	5,194	3,600
Total	<u>85,599</u>	<u>(49,128)</u>

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

(In millions of
Korean won)

	2023						Ending balance
	Beginning balance	Business combination	Profit (loss) for the year	Other comprehen- sive income	Others	Exchange differences	
Net defined benefit liabilities	351,271	-	13,137	17,130	-	1	381,539
Plan assets	(500,896)	-	24,306	(592)	-	-	(477,182)
Provision for impairment on receivables	920	-	540	-	-	(13)	1,447
Property, plant and equipment	139,584	-	(54,749)	-	40	6,887	91,762
Intangible assets	(30,634)	(144,189)	11,834	-	(40)	249	(162,780)
Investments in subsidiaries, associates and joint ventures	(149,750)	-	119,887	-	-	-	(29,863)
Accrued income	62,223	-	31,530	-	-	12,051	105,804
Others	875,240	-	(461,745)	67,262	278	9,420	490,455
	<u>747,958</u>	<u>(144,189)</u>	<u>(315,260)</u>	<u>83,800</u>	<u>278</u>	<u>28,595</u>	<u>401,182</u>
Exchange differences on translation of foreign operations	(966)	-	-	1,799	-	-	833
Tax credit carryforwards	210,260	-	351,146	-	-	(27)	561,379
Tax loss carryforwards	369,580	-	241,303	-	344	(981)	610,246
Deferred tax assets (liabilities)	<u>1,326,832</u>	<u>(144,189)</u>	<u>277,189</u>	<u>85,599</u>	<u>622</u>	<u>27,587</u>	<u>1,573,640</u>

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(In millions of Korean won)

	2022					Ending balance
	Beginning balance	Profit (loss) for the year	Increase (decrease)		Exchange differences	
			Other comprehen- sive income	Others		
Net defined benefit liabilities	411,680	(13,159)	(45,549)	(2,043)	342	351,271
Plan assets	(447,134)	(55,517)	1,755	-	-	(500,896)
Provision for impairment on receivables	161	803	-	-	(44)	920
Property, plant and equipment	120,679	18,520	-	62	323	139,584
Intangible assets	(34,944)	4,399	-	(40)	(49)	(30,634)
Investments in subsidiaries, associates and joint ventures	(97,113)	(60,396)	7,759	-	-	(149,750)
Accrued income	49,252	13,664	-	-	(693)	62,223
Others	1,098,100	(232,678)	12,619	(2,491)	(310)	875,240
	<u>1,100,681</u>	<u>(324,364)</u>	<u>(23,416)</u>	<u>(4,512)</u>	<u>(431)</u>	<u>747,958</u>
Exchange differences on translation of foreign operations	24,703	-	(25,712)	-	43	(966)
Tax credit carryforwards	36,763	173,376	-	-	121	210,260
Tax loss carryforwards	29,139	340,573	-	-	(132)	369,580
Deferred tax assets (liabilities)	<u>1,191,286</u>	<u>189,585</u>	<u>(49,128)</u>	<u>(4,512)</u>	<u>(399)</u>	<u>1,326,832</u>

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The reconciliations between income tax expense and accounting profit for the years ended December 31, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Profit before income tax expense¹	2,490,253	2,842,314
Tax at domestic tax rates applicable to profits in the respective countries²	543,039	823,097
Tax effects of:	(110,538)	(185,973)
Income not subject to tax	(227,498)	(3,649)
Expenses not deductible for tax purposes	22,422	130,565
Recognized deferred income tax arising from temporary differences from previous years	(55,446)	(56,813)
Unrecognized deferred income tax arising from temporary differences in the current period	86,382	68,738
Tax credit	(6,967)	(281,268)
Change in the Korean tax rate	-	14,185
Others (reflection of discontinuation effects, etc.)	70,569	(57,731)
Income tax expense	432,501	637,124
Effective tax rate (income tax expense/profit before income tax)	17.37%	22.42%

¹ The amount includes profit before income tax from discontinued operations.

² The weighted-average applicable tax rate on profit before income tax for the year ended December 31, 2023, is 21.81% (2022: 28.96%).

Realization of deferred tax assets is dependent on the Group's ability to generate future taxable profits in excess of the profits arising from the reversal of taxable temporary differences, and economic and industry outlooks. Management periodically reviews on these factors.

Details of deductible (taxable) temporary differences unrecognized as deferred tax assets (liabilities) as of December 31, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	2023	2022	
Investments in subsidiaries, associates and joint ventures	(914,100)	(908,818)	Permanently reinvested income not distributed as dividend
Land	420	420	No possibility of disposal
Unused tax loss carryforwards ¹	126,160	280,513	Uncertainty of future tax income

¹ The maturity of unused tax loss carryforwards is as follows:

<i>(In millions of Korean won)</i>	Less than 1 year	Between 1 year-2 years	Between 2-5 years	More than 5 years
2023 tax loss carryforwards	6,982	57,562	41,184	20,432
2022 tax loss carryforwards	220	5,956	54,914	219,423

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The consolidated entity applies the temporary exemption provision for deferred corporate taxes under K-IFRS 1012 and does not recognize deferred corporate tax assets and liabilities related to Pillar 2 law and does not disclose information related to deferred corporate taxes. At the present time, the impact of the relevant law is unknown, and ongoing evaluations are planned to assess its impact on financial performance.

29. EARNINGS PER SHARE:

Basic earnings per share is calculated by dividing the profit attributable to equity holders of the Parent Company by the weighted-average number of shares in issue, excluding shares purchased by the Parent Company and held as treasury shares. As of the reporting date, the Parent Company has no potential ordinary shares. Preferred shares have a right to participate in the profits of the Group. These participation rights have been considered in presenting the earnings per share information for both ordinary shares and preferred shares.

Basic earnings per share for profit from continuing operations and earnings per share attributable to the equity holders of the Parent Company for the years ended December 31, 2023 and 2022, are computed as follows:

Basic earnings per ordinary share from continuing operations

<i>(In millions of Korean won and in number of shares)</i>	2023	2022
Profit from continuing operations attributable to ordinary shares ¹	1,215,134	1,611,359
Weighted-average number of ordinary shares outstanding ²	<u>70,592,343</u>	<u>70,262,070</u>
Basic earnings per ordinary share from continuing operations <i>(in Korean won)</i>	<u>17,213</u>	<u>22,934</u>

Basic earnings per ordinary share

<i>(In millions of Korean won and in number of shares)</i>	2023	2022
Profit attributable to ordinary shares ¹	1,206,158	1,663,125
Weighted-average number of ordinary shares outstanding ²	<u>70,592,343</u>	<u>70,262,070</u>
Basic earnings per ordinary shares <i>(in Korean won)</i>	<u>17,086</u>	<u>23,670</u>

Basic earnings per preferred share from continuing operations

<i>(In millions of Korean won and in number of shares)</i>	2023	2022
Profit from continuing operations attributable to preferred share ¹	132,630	176,576
Weighted-average number of preferred shares outstanding ²	<u>7,682,759</u>	<u>7,682,759</u>
Basic earnings per preferred share from continuing operations <i>(in Korean won)</i>	<u>17,263</u>	<u>22,984</u>

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Basic earnings per preferred share

<i>(In millions of Korean won and in number of shares)</i>	2023	2022
Profit attributable to preferred shares ¹	131,654	182,238
Weighted-average number of preferred shares outstanding ²	7,682,759	7,682,759
Basic earnings per preferred shares <i>(in Korean won)</i>	<u>17,136</u>	<u>23,720</u>

¹ Profit attributable to ordinary and preferred shares are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Profit from continuing operations attributable to the equity holders of the Parent Company	1,347,764	1,787,935
Ordinary shares dividends (A)	247,073	702,621
Preferred shares dividends (B)	27,274	77,212
Undistributed earnings from continuing operation for the period	1,073,417	1,008,102
Undistributed earnings available for ordinary shares (C)	968,061	908,738
Undistributed earnings available for preferred shares (D)	105,356	99,364
Profit from continuing operations for the period attributable to ordinary shares (A+C)	1,215,134	1,611,359
Profit from continuing operations for the period attributable to preferred shares (B+D)	132,630	176,576
<i>(In millions of Korean won)</i>	2023	2022
Profit attributable to the equity holders of the Parent Company	1,337,812	1,845,363
Ordinary shares dividends (A)	247,073	702,621
Preferred shares dividends (B)	27,274	77,211
Undistributed earnings for the period	1,063,465	1,065,531
Undistributed earnings available for ordinary shares (C)	959,085	960,504
Undistributed earnings available for preferred shares (D)	104,380	105,027
Profit for the period attributable to ordinary shares (A+C)	1,206,158	1,663,125
Profit for the period attributable to preferred shares (B+D)	131,654	182,238

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² Weighted-average numbers of shares are calculated as follows:

Ordinary shares outstanding	2023			
	Period	Number of shares	Number of days	Number of shares x days
Beginning balance	2023. 1. 1 - 2023. 12. 31	70,592,343	365	25,766,205,195
Total				25,766,205,195

Weighted-average number of ordinary shares outstanding: 25,766,205,195 / 365 = 70,592,343 shares

Preferred shares outstanding	2023			
	Period	Number of shares	Number of days	Number of shares x days
Beginning balance	2023. 1. 1 - 2023. 12. 31	7,682,759	365	2,804,207,035
Total				2,804,207,035

Weighted-average number of preferred shares outstanding: 2,804,207,035 / 365 = 7,682,759 shares

Ordinary shares outstanding	2022			
	Period	Number of shares	Number of days	Number of shares x days
Beginning balance	2022. 1. 1 - 2022. 12. 31	70,224,814	365	25,632,057,110
Disposal of treasury shares	2022. 11. 24 - 2022. 12. 31	367,529	37	13,598,573
Total				25,645,655,683

Weighted-average number of ordinary shares outstanding: 25,645,655,683 / 365 = 70,262,070 shares

Preferred shares outstanding	2022			
	Period	Number of shares	Number of days	Number of shares x days
Beginning balance	2022. 1. 1 - 2022. 12. 31	7,682,759	365	2,804,207,035
Total				2,804,207,035

Weighted-average number of preferred shares outstanding: 2,804,207,035 / 365 = 7,682,759 shares

For the years ended December 31, 2023 and 2022, there were no dilutive potential outstanding ordinary shares at the reporting date. Accordingly, diluted earnings per share for profit attributable to owners of the Parent Company is identical to basic earnings per share.

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Basic and diluted earnings per share attributable to ordinary and preferred shares from discounted operations for the years ended December 31, 2023 and 2022, are as follows:

<i>(In Korean won)</i>	2023	2022
Basic earnings per ordinary share from discounted operations	(127)	736
Basic earnings per preferred share from discounted operations	(127)	736
Diluted earnings per ordinary share from discounted operations	(127)	736
Diluted earnings per preferred share from discounted operations	(127)	736

30. DIVIDENDS:

Details of dividends of the Parent Company as of December 31, 2023 and 2022, are as follows:

	2023	2022
Number of shares entitled to dividends: Shares issued and outstanding (par value per share: ₩5,000)		
Ordinary shares	70,592,343	70,592,343
Preferred shares	7,682,759	7,682,759
Dividend per share <i>(in Korean won, %)</i>		
Ordinary shares: Cash	3,500(70%)	10,000 (200%)
Preferred shares: Cash	3,550(71%)	10,050 (201%)
Cash dividends to distribute <i>(in millions of Korean won)</i>		
Ordinary shares	247,073	705,923
Preferred shares	27,274	77,212
	<u>274,347</u>	<u>783,135</u>

Dividend payout ratios of the Parent Company for the years ended December 31, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Dividends (A)	274,347	783,135
Profit attributable to equity holders of the Parent Company (B)	1,337,812	1,845,363
Dividend payout ratio (A/B)	<u>20.51%</u>	<u>42.44%</u>

Dividend yield ratios of the Parent Company for the years ended December 31, 2023 and 2022, are as follows:

<i>(In Korean won)</i>	2023		2022	
	Ordinary shares	Preferred shares	Ordinary shares	Preferred shares
Dividend per share (A)	3,500	3,550	10,000	10,050
Market value at the end of year (B) ¹	493,100	317,900	616,800	294,700
Dividend yield ratio (A/B)	<u>0.71%</u>	<u>1.12%</u>	<u>1.62%</u>	<u>3.41%</u>

¹ Average price in the stock market during one week preceding two business days before shareholder list closing date for the general shareholders' meeting.

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31. RELATED-PARTY TRANSACTIONS:

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

Related party	Related party's subsidiary (domestic)	Related party's subsidiary (overseas)	Related party's associates and joint ventures
Significant influence over the group: ¹			
LG Corp.			
Subsidiaries of LG Corp.:			
LG CNS Co., Ltd.	Biztech On Co., Ltd. and others	LG CNS America Inc. and others	
D&O Corp.	D&O CM and others	D&O CM POLAND sp.z o.o. and others	
LG Management Development Institute			
LG Sports Ltd.			
LG Holdings Japan Co., Ltd.			
Associates and joint ventures: ²			
TECHWIN Co., Ltd.			
LG Chem Life Sciences Poland Ltd.			
HUAJIN NEW ENERGY MATERIALS(QUZHOU) CO., LTD.			
TL Chemical CO., Ltd.			
KOREA PRECURSOR CO., LTD.			
LG Toray Hungary Battery Separator Kft.			
SEETEC Co., Ltd.			
PT.HLI Green Power.			
Sam-a Aluminium Company, Limited ³			
NEXPO Co., Ltd. ³			
Mintech Co., Ltd. ⁴			
Bricks Capital Management Global Battery Private Equity Fund I ³			
<LG Enterprise group ^{5,6} >			
LG Display Co., Ltd.	Nanumnuri Co., Ltd.	LG Display High-Tech (China) Co., Ltd. and others	
LG Electronics Inc.	LG Innotek Co., Ltd. and others	LG ELECTRONICS INDIA PRIVATE LIMITED and others	Robostar Co., Ltd. and others
LG Household & Health Care Ltd.	Coca-Cola Beverage Co. and others	Beijing LG Household Chemical Co., Ltd. and others	
LG Uplus Corp.	LG HelloVision Corp and others.	DACOM AMERICA, INC.	
HS AD Inc. ⁷		GIIR America Inc. and others	

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- ¹ LG Corp. is an entity exercising a significant influence over the Group, which owns 33.34% of the Parent Company's ordinary shares.
- ² During the year ended December 31, 2023, the Group disposed VINFAST LITHIUM BATTERY PACK LLC., Jiangxi VL Battery., Ltd., VINA PLASTICIZERS CHEM. Therefore, it was excluded from the related parties.
- ³ During the year ended December 31, 2023, the Group newly acquired shares of the company.
- ⁴ Although, the Group owns less than 20% of the shares in the form of redeemable convertible preference shares, it is judged to have significant influence as it holds a right to appoint directors. Meanwhile, it is classified as a financial asset measured at fair value through profit or loss, considering K-IFRS 1109 and the nature of the shares held.
- ⁵ Although, these entities are not the related parties of the Group in accordance with K-IFRS 1024, these entities belong to a large enterprise group in accordance with the Monopoly Regulation and Fair-Trade Act.
- ⁶ During the year ended December 31, 2022, LX Holdings Corp. and its affiliates were excluded from the LG Group due to the spin-off of LG Corp.
- ⁷ During the year ended December 31, 2023, G II R Inc. merged HS AD Inc. and LBEST Inc. After the merger, G II R Inc. changed its name to HS AD Inc.

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(2) Sales and purchases with related parties for the years ended December 31, 2023 and 2022, are as follows:

(In millions of Korean won)	2023						
	Sales and others	Purchase and others					Others
		Purchase of raw materials /merchandises	Acquisition of property, plant and equipment and intangible assets	Acquisition of right-of-use assets	Interest expense		
Entity with a significant influence over the Group							
LG Corp.	₩ 31	₩ -	₩ -	₩ -	₩ -	₩ 146	₩ 115,139
Associates and joint ventures							
SEETEC Co., Ltd.	107,606	275,138	8	2,927	300	96,731	
TECWIN Co., Ltd.	-	153	15,388	-	-	7,561	
HUAJIN NEW ENERGY MATERIALS (QUZHOU) CO., LTD.	230	801,967	-	-	-	-	
PT. HLI Greenpower Co., Ltd.	46,900	-	-	-	-	3,327	
Others	46,472	36,117	206	-	-	198	
Other related parties	-	-	-	-	-	-	
D&O Corp. and its subsidiaries and associates	107	14,462	820,182	-	-	148,832	
LG CNS Co., Ltd. and its subsidiaries	36,947	3,526	883,212	-	13	311,602	
Others	127	-	-	-	-	75,541	
Others	-	-	-	-	-	-	
LG Display Co., Ltd. and its subsidiaries	464,303	124	-	-	10	31	
LG Electronics Inc. and its subsidiaries and joint ventures	2,529,973	314,112	823,940	-	352	58,661	
Shanjin Optoelectronics (Suzhou) Co., Ltd. and its subsidiaries ¹	381,273	344	-	-	-	12,414	
Others	9,790	27,234	673	632	70	9,044	
Total	₩3,623,759	₩ 1,473,177	₩ 2,543,609	₩ 3,559	₩ 891	₩ 839,081	

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(In millions of Korean won)	2022											
	Purchase and others											
	Sales and others		Purchase of raw materials /merchandises		Acquisition of property, plant and equipment and intangible assets		Acquisition of right-of-use assets		Interest expense		Others	
Entity with a significant influence over the Group												
LG Corp.	₩	9	₩	-	₩	1,273	₩	12,230	₩	163	₩	109,233
Associates and joint ventures												
SEETEC Co., Ltd.		133,706		251,919		-		38		395		82,900
TECWIN Co., Ltd.		-		465		2,046		-		-		183
HUAJIN NEW ENERGY MATERIALS (QUZHOU) CO., LTD.		9,453		328,975		-		-		-		76
PT. HLI Greenpower Co., Ltd.		45,987		-		-		-		-		-
Others		4,977		11,481		-		-		-		184
Other related parties												
D&O Corp. and its subsidiaries		207		8,945		775,195		-		-		112,683
LG CNS Co., Ltd. and its subsidiaries		20,356		3,673		784,769		1,221		16		227,618
Others		5		-		-		-		-		50,875
Others												
LG Display Co., Ltd. and its subsidiaries		556,420		70		-		-		13		244
LG Electronics Inc. and its subsidiaries and joint ventures		1,571,438		377,247		539,325		-		377		47,583
LX International Corp. and its subsidiaries		43,477		266,666		79,395		2,783		9		812,884
LX Hausys, Ltd. and its subsidiaries		147,990		4,552		1,048		-		-		3
LX MMA Corporation ²		111,379		109,790		-		-		-		2,582
Shanjin Optoelectronics (Suzhou) Co., Ltd. and its subsidiaries		491,229		20,381		-		-		-		25,935
Others		10,637		32,521		882		48		50		8,736
Total		<u>₩3,147,270</u>		<u>₩ 1,416,685</u>		<u>₩ 2,183,933</u>		<u>₩ 16,320</u>		<u>₩ 1,023</u>		<u>₩1,481,719</u>

¹ Excluded from related parties during the current period, and the details of these relevant transactions are occurred transaction details before it was excluded from related party.

² Net sales and purchase amounts after offsetting for Raffinate transactions with LX MMA Corporation.

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(3) Balances of receivables and payables arising from sales and purchases of goods and services as of December 31, 2023 and 2022, are as follows:

	December 31, 2023			
	Receivables			
	Trade receivables and others	Loan receivables	Other receivables	Total
<i>(In millions of Korean won)</i>				
Entity with a significant influence over the Group				
LG Corp.	₩ -	₩ -	₩ 17,196	₩ 17,196
Associates and joint ventures				
SEETEC Co., Ltd.	13,653	-	1,000	14,653
TECWIN Co., Ltd.	-	-	-	-
HUAJIN NEW ENERGY MATERIALS(QUZHOU) CO., LTD.	-	-	-	-
PT. HLI Greenpower Co., Ltd.	200	-	4,006	4,206
Others	-	-	-	-
Other related parties				
D&O Corp. and its subsidiaries and associates ¹	-	-	23	23
LG CNS Co., Ltd. and its subsidiaries	7,859	-	670	8,529
Others	-	-	6	6
Others				
LG Display Co., Ltd. and its subsidiaries	209,113	-	-	209,113
LG Electronics Inc. and its subsidiaries and joint ventures ¹	349,239	-	5,575	354,814
Others	109	-	2,201	2,310
Total	<u>₩ 580,173</u>	<u>₩ -</u>	<u>₩ 30,677</u>	<u>₩ 610,850</u>

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	December 31, 2023									
	Payables									
	Trade payables	Borrowings	Lease liabilities	Other payables	Total					
<i>(In millions of Korean won)</i>										
Entity with a significant influence over the Group										
LG Corp.	₩	-	₩	-	₩ 3,060	₩ 21,425	₩ 24,485			
Associates and joint ventures										
SEETEC Co., Ltd.		31,148	-	20,662	11,735	63,545				
TECWIN Co., Ltd.		-	-	-	2,566	2,566				
HUAJIN NEW ENERGY MATERIALS(QUZHOU) CO., LTD.		161,178	-	-	-	161,178				
PT. HLI Greenpower Co., Ltd.		-	-	-	45,778	45,778				
Others		3,769	-	-	117	3,886				
Other related parties										
D&O Corp. and its subsidiaries and associates ¹		-	-	-	213,652	213,652				
LG CNS Co., Ltd. and its subsidiaries		293	-	308	472,299	472,900				
Others		-	-	-	1,401	1,401				
Others										
LG Display Co., Ltd. and its subsidiaries		14	-	360	34	408				
LG Electronics Inc. and its subsidiaries and joint ventures ¹		45,591	-	16,026	304,673	366,290				
Others		2,765	-	3,519	7,636	13,920				
Total	₩	<u>244,758</u>	₩	-	₩	<u>43,935</u>	₩	<u>1,081,316</u>	₩	<u>1,370,009</u>

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	December 31, 2022			
	Receivables			
	Trade receivables and others	Loan receivables	Other receivables	Total
<i>(In millions of Korean won)</i>				
Entity with a significant influence over the Group				
LG Corp.	₩	-	₩	-
			₩	10,335
			₩	10,335
Associates and joint ventures				
SEETEC Co., Ltd.		15,002	-	1,221
TECWIN Co., Ltd.		-	-	-
HUAJIN NEW ENERGY MATERIALS(QUZHOU) CO., LTD.		9,453	-	-
PT. HLI Greenpower				1,311
Others		-	-	-
Other related parties				
D&O Corp. and its subsidiaries and affiliates		-	-	-
LG CNS Co., Ltd. and its subsidiaries		5,782	-	319
Others		-	-	5
Others				
LG Display Co., Ltd. and its subsidiaries		78,507	-	419
LG Electronics Inc. and its subsidiaries and joint ventures ¹		396,289	-	27,917
Shanjin Optoelectronics (Suzhou) Co., Ltd. and its subsidiaries		57,361	-	1,792
Others		42	-	2,923
Total	₩	562,436	₩	-
			₩	46,242
			₩	608,678

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	December 31, 2022				
	Payables				
	Trade payables	Borrowings	Lease liabilities	Other payables	Total
<i>(In millions of Korean won)</i>					
Entity with a significant influence over the Group					
LG Corp.	₩	-	₩	-	₩ 42,581
Associates and joint ventures					
SEETEC Co., Ltd.		29,368		-	₩ 59,434
TECWIN Co., Ltd.		-		-	₩ 328
HUAJIN NEW ENERGY MATERIALS(QUZHOU) CO., LTD.		34,300		-	₩ 34,300
PT. HLI Greenpower		-		-	₩ 88,093
Others		1		-	₩ 47
Other related parties					
D&O Corp. and its subsidiaries and affiliates		-		-	₩ 497,005
LG CNS Co., Ltd. and its subsidiaries		536		-	₩ 497,697
Others		-		-	₩ 1,168
Others					
LG Display Co., Ltd. and its subsidiaries		28		-	₩ 529
LG Electronics Inc. and its subsidiaries and joint ventures ¹		77,581		-	₩ 256,997
Shanjin Optoelectronics (Suzhou) Co., Ltd. and its subsidiaries		449		-	₩ 17,414
Others		1,488		-	₩ 11,038
Total	₩	143,751	₩	-	₩ 52,444
				₩	1,310,437
					₩ 1,506,632

¹ The warranty provision related to the recall of GM Bolt is not included in the above receivables and payables.

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

(In millions of Korean won)	2023												
	Dividends received	Dividends paid	Investment In Cash (capital reduction)	Loans				Borrowings ¹					
				Loans	Redemption	Borrowings	Redemption						
Entity with a significant influence over the Group													
LG Corp.	₩	-	₩ 235,342	₩	-	₩	-	₩	-	₩	-	₩	12,148
Associates and joint ventures													
SEETEC Co., Ltd.		5,000	-	-	-	-	-	-	-	2,927	-	1,357	
KOREA PRECURSOR CO., LTD.		-	-	30,576	-	-	-	-	-	-	-	-	
Sam-A Aluminium Co., Ltd.		-	-	46,575	-	-	-	-	-	-	-	-	
VINA PLASTICIZERS CHEM		4,444	-	-	-	-	-	-	-	-	-	-	
NEXPO Co., Ltd		-	-	2,375	-	-	-	-	-	-	-	-	
Mintech Co., Ltd		-	-	7,020	-	-	-	-	-	-	-	-	
Bricks Capital Management Global Battery Private Equity Fund I		-	-	13,381	-	-	-	-	-	-	-	-	
Other related parties													
LG CNS Co., Ltd.		-	-	-	-	-	-	-	-	-	-	1,222	
Others													
LG Display America, Inc.		-	-	-	-	-	-	-	-	-	-	178	
LG Electronics Deutschland GmbH		-	-	-	-	-	-	-	-	-	-	324	
LG ELECTRONICS WROCLAW SP. Z O.O.		-	-	-	-	-	-	-	-	-	-	1,503	
LG Display Vietnam Haiphong Co. Ltd.		-	-	-	-	-	-	-	-	105	-	21	
LG HOUSEHOLD & HEALTH CARE LTD.		-	-	-	-	-	-	-	-	632	-	979	
Total	₩	9,444	₩ 235,342	₩ 99,927	₩	-	₩	-	₩	3,664	₩	17,732	

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(In millions of Korean won)	2022										
	Dividends received	Dividends paid	Investment In Cash (capital reduction)	Loans		Borrowings ¹					
				Loans	Redemption	Borrowings	Redemption				
Entity with a significant influence over the Group											
LG Corp.	₩	-	₩ 282,411	₩	-	₩	-	₩ 12,230	₩	11,845	
Associates and joint ventures											
SEETEC Co., Ltd.		5,000	-	-	-	-	-	38		959	
LG Toray Hungary Battery Separator Kft ²		-	-	483,638	-	-	-	-	-	-	
KOREA PRECURSOR CO., LTD.		-	-	20,384	-	-	-	-	-	-	
Other related parties											
LG CNS Co., Ltd.		-	-	-	-	-	-	1,221		1,190	
Others											
LG Display America, Inc.		-	-	-	-	-	-	-		176	
LX Pantos Poland sp.z.o.o ³		-	-	-	-	-	-	62		7	
PANTOS LOGISTICS MEXICO S.A. de C.V. ³		-	-	-	-	-	-	2,384		320	
LX PANTOS TURKEY LOJISTIK ³		-	-	-	-	-	-	337		41	
LG Electronics Deutschland GmbH		-	-	-	-	-	-	-		293	
LG ELECTRONICS WROCLAW SP. Z O.O.		-	-	-	-	-	-	-		1,411	
LG HOUSEHOLD & HEALTH CARE LTD.		-	-	-	-	-	-	48		628	
Shanjin Optoelectronics (Suzhou) ⁴		-	-	-	-	-	-	-		-	
Total	₩	5,000	₩ 282,411	₩ 504,022	₩	-	₩	-	₩ 16,320	₩	16,870

¹ The amounts represent lease liabilities that were recognized or repaid for the years ended December 31, 2023 and 2022.

² The amount is related to the acquisition of 50% of the shares during the year ended December 31, 2022.

³ The entity has been excluded from the related parties due to the spin-off from LG Corp. during the year ended December 31, 2022. Transactions with this entity until the spin-off from LG Corp. have been included in the above information.

⁴ During the year ended December 31, 2022, the Group disposed its shares of Shanjin Optoelectronics (Taiwan) Co., LTD., amounting to USD 38 million. This amount is not included in the above table.

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- (5) Compensation for key management of the Group for the years ended December 31, 2023 and 2022, consists of the following:

	2023		2022	
<i>(In millions of Korean won)</i>				
Short-term employee benefits	₩	151,938	₩	124,860
Postemployment benefits		13,704		12,779
Total	₩	<u>165,642</u>	₩	<u>137,639</u>

Key management includes directors and audit committee members having duties and responsibilities over planning, operations and controlling of the Group's business activities.

There is no loss allowance recognized against receivables from related parties as of December 31, 2023 and 2022; therefore, there are no impairment losses recognized against the receivables from related parties for the years ended December 31, 2023 and 2022.

As of December 31, 2023, payment guarantees provided by the Group for related parties are listed in Note 18.

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32. CASH FLOWS:

Cash generated from operations for the years ended December 31, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Profit before income tax	2,490,253	2,842,314
Profit before income tax from continuing operations	2,498,140	2,778,292
Profit before income tax from discontinued operations	<u>(7,887)</u>	<u>64,022</u>
Adjustments for:		
Depreciation	3,558,790	3,105,158
Amortization	398,713	290,921
Postemployment benefits	169,496	209,593
Finance income	(914,933)	(475,836)
Finance costs	912,843	710,368
Other foreign exchange differences	(2,910)	70,601
Loss on valuation of inventories (reversal)	(35,729)	143,381
Gain on disposal of property, plant and equipment	(23,702)	(77,051)
Gain on disposal of intangible assets	(191)	(8)
Loss on disposal of property, plant and equipment	152,080	79,080
Loss on disposal of intangible assets	31,532	23,032
impairment loss on property, plant and equipment	199,543	38,661
Impairment loss on intangible assets	4,745	25,998
Gain on disposal of investments in associates	14,560	-
Gain on disposal of business	-	(35,445)
Additions to provisions	928,528	688,552
Share of net loss of associates and joint ventures accounted for using the equity method	(33,311)	(46,215)
Other expenses (income)	(133,534)	73,248
Decrease (Increase) in inventories	2,964,732	(3,818,016)
Increase in trade receivables	(299,774)	(1,446,523)
Decrease (increase) in other receivables	(77,856)	421,479
Increase in other current assets	(115,317)	(462,353)
Increase (decrease) in trade payables	(982,141)	1,147,415
Decrease in other payables	447,558	463,027
Decrease in other current liabilities	654,072	165,520
Decrease in provisions	(1,053,663)	(1,343,399)
Decrease in net defined benefit liabilities	(122,570)	(588,368)
Other cash flows from operations	6,795	145,163
Cash generated from operations	<u>9,138,609</u>	<u>2,350,297</u>

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Changes in liabilities arising from financial activities for the years ended December 31, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	2023					At December 31, 2023
	At January 1, 2023	Cash flows from financing activities	Acquisition	Amortization	Others	
Short-term borrowings	7,609,924	1,697,178	-	4,251	364,645	9,675,998
Debentures	7,964,957	4,298,138	-	54,639	(557,484)	11,760,250
Lease liabilities	389,638	(120,301)	275,797		(53,268)	491,866
Other payables for the reverse factoring arrangement	-	(825,480)	-	-	825,480	-
Total	15,964,519	5,049,535	275,797	58,890	579,373	21,928,114

<i>(In millions of Korean won)</i>	2022					At December 31, 2022
	At January 1, 2022	Cash flows from financing activities	Acquisition	Amortization	Others	
Short-term borrowings	6,373,909	1,168,663	-	-	67,351	7,609,923
Debentures	8,072,580	(273,232)	-	8,138	157,471	7,964,957
Lease liabilities	319,245	(95,804)	172,352	-	(6,155)	389,638
Other payables for the reverse factoring arrangement	299,645	(299,645)	-	-	-	-
Total	15,065,379	499,982	172,352	8,138	218,667	15,964,518

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The significant non-cash transactions for the years ended December 31, 2023 and 2022, are as follows:

<i>(in millions of Korean won)</i>	2023	2022
Reclassification of construction in progress	5,967,538	6,517,021
Reclassification of machinery in transit	118,933	108,802
Reclassification of long-term borrowings into current portion	5,360,352	2,431,697
Other payables related to acquisitions of property, plant and equipment and intangible assets	131,449	2,838,260
Reclassification of other payables under the reverse factoring arrangement	825,480	-
Transfer of non-current assets held for sale	195,106	23,129
Transfer of non-current liabilities held for sale	27,055	15

33. SEGMENT INFORMATION:

General information about the Group's reportable segments is as follows:

Segment	Products or services
Petrochemicals	ABS, PC, PE, PP, Acrylic, Alcohol, SAP, PVC, Synthetic rubber, Special resin, BPA, Ethylene, Propylene and others
LG Energy solution	Mobile batteries, Automotive batteries, Electricity storage batteries and others
Advanced materials	Automotive components, LCD Photoresist, OLED materials, anodic materials and others
Life sciences	Growth hormone, Vaccine, Antidiabetic, agricultural chemicals and others
Common and others ¹	Crop protection products, Seeds, Fertilizers, General management, sales and R&D and others

¹ The management approved the disposal of LCD polarizer business from the subsidiary in Taiwan, polarizer and polarizer material business and the related profit and loss are presented as discontinued operations are disclosed in Note 34.

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Segment information on revenue, profit and loss for the years ended December 31, 2023 and 2022, is as follows:

<i>(In millions of Korean won)</i>	2023					
	Petro-chemicals	LG Energy solution	Advanced materials	Life sciences	Common and others³	Total
Total segment revenue	₩17,808,799	₩33,745,470	₩7,407,774	₩1,183,354	₩819,456	₩60,964,853
Intersegment revenue	599,996	78,242	4,965,984	55,279	15,567	5,715,068
Revenue from external customers ¹	17,208,803	33,667,228	2,441,790	1,128,075	803,889	55,249,785
Operating profit (loss) ²	(143,452)	2,163,234	584,534	28,476	(103,596)	2,529,196
Depreciation and amortization	1,030,220	2,285,614	189,478	135,287	272,878	3,913,477

<i>(In millions of Korean won)</i>	2022					
	Petro-chemicals	LG Energy solution	Advanced materials	Life sciences	Common and others³	Total
Total segment revenue	₩21,723,421	₩25,598,609	₩7,082,078	₩909,085	₩892,999	₩56,206,192
Intersegment revenue	572,066	12,244	4,543,684	59,796	35,151	5,222,941
Revenue from external customers ¹	21,151,355	25,586,365	2,538,394	849,289	857,848	50,983,251
Operating profit (loss) ²	1,074,494	1,215,937	908,026	73,490	(292,593)	2,979,354
Depreciation and amortization	982,360	1,835,806	180,132	99,180	251,059	3,348,537

¹ Revenue from external customers consists of sales of goods. Interest income and dividend income are included in finance income.

² Management assesses the performance of the operating segments based on a measurement of operating profit of segment.

³ Common and other segments include operating segments not qualifying as a reportable segment, supporting divisions, as well as R&D divisions.

Segment information on assets and liabilities as of December 31, 2023 and 2022, is as follows:

<i>(In millions of Korean won)</i>	December 31, 2023					
	Petro-chemicals	LG Energy solution	Advanced materials	Life sciences	Common and others	Total
Reportable segment asset ¹	₩15,144,156	₩45,399,160	₩7,378,796	₩2,664,518	₩6,880,064	₩77,466,694
Investments in associates and joint ventures	49,203	223,559	578,394	17	154,433	1,005,606
Reportable segment liability ¹	4,873,964	21,036,411	2,211,319	592,085	7,814,730	36,528,509

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<i>(In millions of Korean won)</i>	December 31, 2022					Total
	Petro-chemicals	LG Energy solution	Advanced materials	Life sciences	Common and others	
Reportable segment asset ¹	₩ 14,894,527	₩ 38,260,414	₩ 6,828,293	₩ 1,794,744	₩ 6,195,845	₩ 67,973,823
Investments in associates and joint ventures	47,816	203,696	547,016	17	151,008	949,553
Reportable segment liability ¹	5,375,055	17,688,146	2,292,775	333,712	4,803,008	30,492,696

¹ Assets and liabilities are measured in a manner consistent with those in the financial statements and allocated on the basis of segment operation.

The external sales and non-current assets by geographical segments from continuing operations as of and for the years ended December 31, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	Sales		Non-current assets ¹	
	2023	2022	December 31, 2023	December 31, 2022
Korea ²	₩ 10,513,452	₩ 8,842,739	₩ 19,676,808	₩ 17,886,010
China	12,809,500	15,441,201	5,242,483	4,875,247
Asia/Oceania	5,636,110	5,679,012	342,873	229,732
America	13,420,099	9,048,043	12,246,392	4,846,029
Europe	12,807,192	11,485,654	5,223,709	4,609,954
Others	63,432	486,602	-	-
Total	₩ 55,249,785	₩ 50,983,251	₩ 42,732,265	₩ 32,446,972

¹ Represents aggregate amount of property, plant and equipment; intangible assets; and investment properties.

² Domestic sales include the exports made through local letters of credit.

During the year ended December 31, 2023, revenue to single external customers accounting for more than 10% of the Group's revenue was ₩6,135,823 million (₩4,858,634 million in previous period) and ₩5,711,817 million (₩3,244,739 million in previous period), respectively, all from LG Energy Solution, Ltd.

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34. ASSETS AND LIABILITIES HELD FOR SALE AND DISCONTINUED OPERATIONS:

34.1 Assets and Liabilities Held for Sale

In accordance with the final approval of management, the Group decided to dispose of polarizer and related material business (September 2023) and diagnosis business (June 2023) and all shares of VINA PLASTICIZERS CHEMICAL COMPANY LIMITED (September 2022). As a result, the related assets were reclassified as assets held for sale. Sale of the diagnostic business was finalized in October 2023, and the entire share of VINA PLASTICIZERS CHEMICAL COMPANY LIMITED was sold in December 2023.

The land of FarmHannong Co., Ltd., which is held for sale in accordance with the river maintenance plan, is in the process of the compensation plan with Gimhae City Hall. The Group decided to dispose of the land and buildings related to the former horticultural factory of FarmHannong Co., Ltd. (November 2022), and related assets were reclassified as assets held for sale.

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

<i>(In millions of Korean won)</i>	December 31, 2023		December 31, 2022	
Assets of disposal group				
Property, plant and equipment	₩	64,589	₩	10,658
Intangible assets		38,345		-
Inventories		57,708		-
Trade and other receivables		3,517		-
Right-of-use assets		6,587		-
Investments in joint ventures		-		16,822
Other current and non-current assets		24,360		-
Total	₩	195,106	₩	27,480
Liabilities of disposal group				
Trade and non-trade payables	₩	20,613	₩	-
Other current and non-current liabilities		6,442		-
Total	₩	27,055	₩	-

As the net fair value of the assets of the disposal group is expected to exceed the carrying amount, there is no impairment loss recognized for the disposal group classified as assets held for sale as of December 31, 2023.

34.2 Discontinued Operations

The Group decided to discontinue polarizer and related material business with the resolution of the board of directors in September 2023 and, substantially, discontinued the related business as of September 2023. Also, the Group decided to discontinue glass substrate business with the resolution of the board of directors in January 2020 and, substantially, discontinued the related business as of March 2020. In addition, the Group decided to dispose of LCD polarizer business with the resolution of the board of directors in June 2020, and the disposal was completed in February 2021. The Group determined to disposed of LCD polarizer business in Taiwan in May 2022, and the disposal was completed in July 2022. Accordingly, the profit and loss from the related operations are presented as discontinued operations and the comparative consolidated statements of profit or loss have been restated

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Comprehensive income information from discontinued operations for the years ended December 31, 2023 and 2022, is as follows:

<i>(In millions of Korean won)</i>	2023			
	LCD polarizer	Glass substrate	Polarizer and related material	Total
Revenue	₩ 307	₩ 1	₩ 808,145	₩ 808,453
Expense	-	(4,940)	(811,400)	(816,340)
Profit (loss) before income tax of discontinued operation	307	(4,939)	(3,255)	(7,887)
Income tax benefit (expense)	167	(2,689)	(1,805)	(4,327)
Profit (loss) after income tax of discontinued operations	₩ 474	₩ (7,628)	₩ (5,060)	₩ (12,214)

<i>(In millions of Korean won)</i>	2022			
	LCD polarizer	Glass substrate	Polarizer and related material	Total
Revenue	₩ 80,185	₩ 354	₩ 970,271	₩ 1,050,810
Expense	(47,593)	(3,183)	(936,012)	(986,788)
Profit (loss) before income tax of discontinued operation	32,592	(2,829)	34,259	64,022
Income tax benefit (expense)	(5,958)	644	(4,358)	(9,672)
Profit (loss) after income tax of discontinued operations	₩ 26,634	₩ (2,185)	₩ 29,901	₩ 54,350

Net cash flows from discontinued operations for the years ended December 31, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	2023			
	LCD polarizer	Glass substrate	Polarizer and related material	Total
Net cash inflow (outflow) from operating activities	₩ (14,261)	₩ (7,148)	₩ 49,988	₩ 28,579
Net cash inflow (outflow) from investing activities	(24)	9,750	(27,565)	(17,839)
Net cash inflow (outflow) from financing activities	-	-	-	-

<i>(In millions of Korean won)</i>	2022			
	LCD polarizer	Glass substrate	Polarizer and related material	Total
Net cash inflow (outflow) from operating activities	₩ (4,558)	₩ (2,782)	₩ 3,664	₩ (3,676)
Net cash inflow (outflow) from investing activities	45,119	712	(21,078)	24,753
Net cash inflow (outflow) from financing activities	(40,561)	2,070	-	(38,491)

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35. ASSETS AND LIABILITIES RELATED TO CONTRACTS WITH CUSTOMERS:

Assets and liabilities related to contracts with customers as of December 31, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	December 31, 2023	December 31, 2022
Contract assets		
Due from customers for contract work	70,356	11,570
Total contract assets	<u>70,356</u>	<u>11,570</u>
Contract liabilities		
Advances in relation to revenue from the Group's main business activities	1,361,224	364,763
Expected customer incentives	5,494	6,277
Unearned revenue	95,277	140,024
Due to customers for contract work	2,785	14,315
Total contract liabilities	<u>1,464,780</u>	<u>525,379</u>

Revenue recognized in relation to contract liabilities

The following table shows how much of the revenue recognized in the current reporting period relates to carried-forward contract liabilities and how much relates to performance obligations that were satisfied in the prior periods.

<i>(In millions of Korean won)</i>	2023	2022
Revenue recognized in the current period from the contract liabilities balance at the beginning of the period	291,182	242,438
Advances in relation to revenue from the Group's main business activities	231,896	191,414
Unearned revenue	59,286	51,024
Revenue recognized from performance obligations satisfied in previous periods	-	-

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36. INVESTMENT PROPERTIES:

Details of investment properties as of December 31, 2023 and 2022, are as follows:

(In millions of Korean won)	December 31, 2023				December 31, 2022			
	Acquisition cost	Accumulated depreciation	Accumulated impairment	Book amount	Acquisition cost	Accumulated depreciation	Accumulated impairment	Book amount
Land	4,475	(75)	(497)	3,903	5,287	(46)	(497)	4,744
Buildings	121,881	(18,591)	(18,243)	85,047	123,296	(15,764)	(18,250)	89,282
Total	126,356	(18,666)	(18,740)	88,950	128,583	(15,810)	(18,747)	94,026

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

(In millions of Korean won)	December 31, 2023			December 31, 2022		
	Land	Building	Total	Land	Building	Total
Beginning balance	4,744	89,282	94,026	4,211	52,086	56,297
Acquisitions/transfers	-	359	359	1,562	60,018	61,580
Disposals/transfers	(811)	(1,189)	(2,000)	(486)	(1,493)	(1,979)
Depreciation	(30)	(3,405)	(3,435)	(46)	(3,130)	(3,176)
Impairment ¹	-	-	-	(497)	(18,199)	(18,696)
Ending balance	3,903	85,047	88,950	4,744	89,282	94,026

¹ Impairment recognized for Magok contributed public facility classified as investment properties. As the recoverable amount was less than the carrying amount due to the impact of lease payment setting for public purposes and others, impairment losses were recognized during the year ended December 31, 2022.

The fair value of investment properties is measured either by independent professional appraisers with certified qualification or measured based on official appraised value of land and available information from recent transactions of similar properties, and it is classified as 'Level 3' of the fair value hierarchy. The fair value of investment properties as of December 31, 2023, is ₩101,704 million (2022: ₩102,298 million).

Rental income from investment properties under operating lease is ₩5,795 million (2022: ₩7,857 million), and operating expenses incurred for investment properties that generated rental income (including maintenance and repair expenses) are ₩3,434 million (2022: ₩3,409 million). There are no operating expenses incurred for investment properties that do not generate rental income (including maintenance and repair expenses) (2022: ₩8 million).

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Operating lease

Investment properties are leased to tenants under operating leases with monthly rent payments. Where considered necessary to reduce credit risk, the Group may obtain bank guarantees for the term of the lease.

Although the Group is exposed to changes in the residual value at the end of the current leases, the Group typically enters into new operating leases and, therefore, will not immediately realize any reduction in residual value at the end of these leases. Expectations about the future residual values are reflected in the fair value of investment properties.

The future minimum lease payments expected to be received in relation to the above operating lease agreement for investment properties as of December 31, 2023 and 2022, are as follows:

<i>(in millions of Korean won)</i>	December 31, 2023	December 31, 2022
Within one year	2,073	8,575
Within two years	2,053	2,039
Within five years	4,085	6,106
Total	8,211	16,720

37. BUSINESS COMBINATION:

(1) To establish a foundation for becoming a global pharmaceutical company, the Group acquired 100% interest in Aveo Pharmaceuticals, Inc. on January 20, 2023, for the purpose of securing commercialization capabilities and preemptive products in the US anticancer market.

Details of consideration transferred, assets and liabilities recognized as a result of the business combination paid to Aveo Pharmaceuticals, Inc. are as follows:

The goodwill of ₩275,856 million resulting from the business combination arises from various factors, including the expected increase in revenue resulting from the combination of the businesses of the company and Aveo Pharmaceuticals, Inc.

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<i>(In millions of Korean won)</i>	Amount
Consideration transferred	
Cash and cash equivalents	701,103
Total consideration	<u>701,103</u>
Identifiable assets acquired and liabilities assumed	
Cash and cash equivalents	8,902
Trade and other receivables ¹	34,687
Inventories	845
Property, plant and equipment	935
Intangible assets	565,448
Other assets	246
Trade and non-trade payables	(40,941)
Other payables	(686)
Deferred tax liabilities	(144,189)
Fair value of net identifiable assets acquired	<u>425,247</u>
Goodwill (gain from a bargain purchase)	<u>275,856</u>
	<u>701,103</u>

¹ The fair value of trade and other receivables is equal to the total contractual amount.

The revenue and net loss reflected in the consolidated statement of income contributed by Aveo Pharmaceuticals, Inc. after the acquisition were ₩200,439 million and ₩47,793 million, respectively.

Revenue and profit or loss of the Group for the year ended December 31, 2023, would have been ₩55,261,526 million and ₩2,027,107 million, respectively, as though the acquisition of Aveo Pharmaceuticals, Inc. had occurred as of the beginning of the year ended December 31, 2023.

The Group accounts for the business combination with provisional amounts as of December 31, 2023, and the amounts may be adjusted if there is new information obtained about facts and circumstances related to business combination within the measurement period of one year from the acquisition date.

(2) On February 28, 2022, the Group acquired 100% shares of LG Energy Solution Vertech Inc., an electricity storage batteries installation service provider in the USA. The acquisition is expected to increase sales through expanded vertical integration by strengthening contact points with customers of electricity storage batteries.

Details of consideration transferred, assets and liabilities recognized as a result of the business combination paid to LG Energy Solution Vertech Inc. are as follows:

Gain from a bargain purchase amounting to ₩30,673 million that occurred from the acquisition is recognized as other non-operating income in the consolidated statements of profit or loss.

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<i>(In millions of Korean won)</i>	Amount
Consideration transferred	
Cash and cash equivalents	16,168
Total consideration	<u>16,168</u>
Identifiable assets acquired and liabilities assumed	
Cash and cash equivalents	7,748
Trade and other receivables ¹	56,333
Inventories	5,477
Property, plant and equipment	7,251
Intangible assets	1,503
Other assets	12,295
Trade and non-trade payables	(25,859)
Other payables	(15,543)
Deferred tax liabilities	(2,364)
Fair value of net identifiable assets acquired	<u>46,841</u>
Goodwill (gain from a bargain purchase)	<u>(30,673)</u>
	<u>16,168</u>

¹ The fair value of trade and other receivables is equal to the total contractual amount.

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38. EVENTS AFTER THE REPORTING PERIOD:

(1) The Group decided to issue non-guaranteed bonds in KRW by resolution of the Board of Directors held on December 21, 2023. Accordingly, the Group issued bonds in KRW of ₩100,000 million on January 31, 2024.

<i>(In millions of Korean won)</i>	Maturity date	Amount
Non-guaranteed bonds in KRW (two years maturity)	2026.01.30	KRW 50,000
Non-guaranteed bonds in KRW (three years maturity)	2027.01.29	KRW 50,000

(2) The Group decided to issue non-guaranteed bonds in KRW by resolution of the Board of Directors held on January 25, 2024. Accordingly, the Group issued bonds in KRW of ₩1,600,000 million on February 16, 2024.

<i>(In millions of Korean won)</i>	Maturity date	Amount
Non-guaranteed bonds in KRW (two years maturity)	2026.02.16	KRW 180,000
Non-guaranteed bonds in KRW (three years maturity)	2027.02.16	KRW 660,000
Non-guaranteed bonds in KRW (five years maturity)	2029.02.16	KRW 570,000
Non-guaranteed bonds in KRW (seven years maturity)	2031.02.16	KRW 190,000

(3) The Group decided to issue non-guaranteed bonds in KRW by resolution of the Management Committee held on February 5, 2024. Accordingly, the Group issued bonds in KRW of ₩1,000,000 million on March 6, 2024.

<i>(In millions of Korean won)</i>	Maturity date	Amount
Non-guaranteed bonds in KRW (two years maturity)	2026.03.06	KRW 100,000
Non-guaranteed bonds in KRW (three years maturity)	2027.03.05	KRW 320,000
Non-guaranteed bonds in KRW (five years maturity)	2029.03.06	KRW 380,000
Non-guaranteed bonds in KRW (seven years maturity)	2031.03.06	KRW 200,000

(4) In February 2024, The Group established a subsidiary in Tennessee, USA and paid in capital of 100 million USD to enter the cathode materials business in North America.

39. APPROVAL OF ISSUANCE OF THE CONSOLIDATED FINANCIAL STATEMENTS:

The consolidated financial statements 2023 were approved for issue by the Board of Directors on January 31, 2024, and it is planned to be finally approved at the Annual General Meeting.

Report on Independent Auditor's Audit of Internal Control over Financial Reporting

(English Translation of a Report Originally Issued in Korean)

To the Shareholders and Board of Directors of
LG Chem, Ltd.:

Opinion on Internal Control over Financial Reporting

We have audited LG Chem, Ltd. and its subsidiaries (the "Group") Internal Control over Financial Reporting as of December 31, 2023, based on *Conceptual Framework for Designing and Operating Internal Control over Financial Reporting*.

In our opinion, the Group maintained, in all material respects, effective internal control over financial reporting as of December 31, 2023, based on *Conceptual Framework for Designing and Operating Internal Control over Financial Reporting*.

We also have audited, in accordance with Korean Standards on Auditing, the consolidated financial statements of the Group, which comprise the consolidated statement of financial position as of December 31, 2023, and the consolidated statement of profit or loss, consolidated statement of comprehensive income, consolidated statement of changes in equity and consolidated statement of cash flow for the year then ended, and notes to the consolidated financial statements including material accounting policies, and our report dated on March 7, 2024, expressed unqualified opinion.

Basis for Opinion on Internal Control over Financial Reporting

We conducted our audit in accordance with Korean Standards on Auditing. Our responsibility under these standards is further described in the *Auditor's Responsibilities for the Audit of the Internal Control over Financial Reporting* 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 internal control over financial reporting, 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.

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

Management is responsible for designing, implementing and maintaining effective internal control over financial reporting, and for its assessment about the effectiveness of internal control over financial reporting, included in the accompanying *Report on the Effectiveness of Internal Control over Financial Reporting*.

Those charged with governance have the responsibilities of overseeing internal control over financial reporting.

Deloitte.

Auditor's Responsibilities for the Audit of Internal Control over Financial Reporting

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

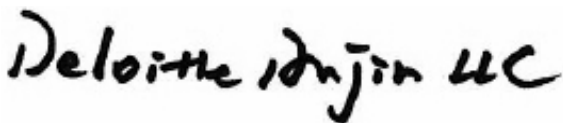
An audit of internal control over financial reporting involves performing procedures to obtain audit evidence about whether a material weakness exists. The procedures selected depend on the auditor's judgment, including the assessment of the risks that a material weakness exists. An audit includes obtaining an understanding of internal control over financial reporting and testing and evaluating the design and operating effectiveness of internal control over financial reporting based on the assessed risk.

Definition and Inherent Limitations of Internal Control over Financial Reporting

A Group's internal control over financial reporting is a process effected by those charged with governance, management, and other personnel, designed to provide reasonable assurance regarding the preparation of reliable consolidated financial statements in accordance with International Financial Reporting Standards as adopted by the Republic of Korea. A group's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the group; (2) provide reasonable assurance that transactions are recorded, as necessary, to permit preparation of consolidated financial statements in accordance with International Financial Reporting Standards as adopted by the Republic of Korea, and that receipts and expenditures of the group are being made only in accordance with authorizations of management and those charged with governance; and (3) provide reasonable assurance regarding prevention, or timely detection and correction of unauthorized acquisition, use or disposition of the group's assets that could have a material effect on the consolidated financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect and correct misstatements. Also, projections of any assessment of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

The engagement partner on the audit resulting in this independent auditor's report is Young-Jae Kim, Certified Public Accountant.



Seoul, Korea

March 7, 2024

This report is effective as of March 7, 2024, the audit report date. Certain subsequent events or circumstances, which may occur between the audit report date and the time of reading this report, could have a material impact on the Group's internal control over financial reporting 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.

Report on the Effectiveness of Internal Control over Financial Reporting

(English Translation of a Report Originally Issued in Korean)

To the Shareholders, Board of Directors and Audit Committee of
LG Chem, Ltd.:

We, as the Chief Executive Officer (“CEO”) and the Internal Control over Financial Reporting (“ICFR”) Officer of LG Chem, Ltd. and its subsidiaries (the “Group”), assessed the effectiveness of the design and operation of the Group’s Internal Control over Financial Reporting for the year ended December 31, 2023.

The Group’s management, including ourselves, is responsible for designing and operating ICFR. We assessed the design and operating effectiveness of the ICFR in the prevention and detection of an error or fraud that may cause material misstatements in the preparation and disclosure of reliable consolidated financial statements.

We designed and operated ICFR in accordance with *Conceptual Framework for Designing and Operating Internal Control over Financial Reporting* established by the Operating Committee of Internal Control over Financial Reporting in Korea (the “ICFR Committee”). And we conducted an evaluation of ICFR based on *Management Guideline for Evaluating and Reporting Effectiveness of Internal Control over Financial Reporting* established by the ICFR Committee.

Based on the assessment results, we believe that the Group’s ICFR, as of December 31, 2023, is designed and operating effectively, in all material respects, in accordance with *Conceptual Framework for Designing and Operating Internal Control over Financial Reporting*.

We certify that this report does not contain any untrue statement of a fact or omit to state a fact necessary to be presented herein. We also certify that this report does not contain or present any statement which causes material misunderstandings, and we have reviewed and verified this report with sufficient due care.

January 31, 2024

Hak -Cheol Shin, Chief Executive Officer

Dong-Seok Cha, Internal Control over Financial Reporting Officer