

LG CHEM, LTD. AND SUBSIDIARIES

Condensed Consolidated Interim Financial Statements

**As of September 30, 2023, and December 31, 2022,
and for the Three-Month and Nine-Month Periods Ended
September 30, 2023 and 2022**



LG Chem, Ltd. and Subsidiaries

Index

As of September 30, 2023, and December 31, 2022,
and for the Three-Month and Nine-Month Periods Ended September 30, 2023 and 2022

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Report on Review of Condensed Consolidated Interim Financial Statements

(English Translation of a Report Originally Issued in Korean)

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

Reviewed Condensed Consolidated Interim Financial Statements

We have reviewed the accompanying condensed consolidated interim financial statements of LG Chem, Ltd. and its subsidiaries (collectively, the “Group”). These condensed consolidated interim financial statements consist of the condensed consolidated interim statement of financial position of the Group as at September 30, 2023, and the related condensed consolidated interim statement of profit or loss, condensed consolidated interim statement of comprehensive income for three-month and nine-month periods ended September 30, 2023, and condensed consolidated interim statement of changes in equity and condensed consolidated interim statement of cash flows, all expressed in Korean won, for the nine-month periods ended September 30, 2023, and a summary of material accounting policies and other explanatory notes, expressed in Korean won.

Management's Responsibility for the Condensed Consolidated Interim Statements of Financial Statements

Management is responsible for the preparation and fair presentation of these condensed consolidated interim financial statements in accordance with International Financial Reporting Standards as adopted by the Republic of Korea (K-IFRS) 1034 *Interim Financial Reporting*, and for such internal control as management determines is necessary to enable the preparation of condensed consolidated interim financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to issue a report on these condensed consolidated interim financial statements based on our review.

We conducted our review in accordance with quarterly or semiannual review standards established by the Securities and Futures Commission of the Republic of Korea. A review of interim financial information consists of making inquiries, primarily of persons responsible for financial and accounting matters, and applying analytical and other review procedures. A review is substantially less in scope than an audit conducted in accordance with Korean Standards on Auditing and, consequently, does not enable us to obtain assurance that we would become aware of all significant matters that might be identified in an audit. Accordingly, we do not express an audit opinion.



Conclusion

Based on our review, nothing has come to our attention that causes us to believe the accompanying condensed consolidated interim financial statements are not presented fairly, in all material respects, in accordance with K-IFRS 1034 *Interim Financial Reporting*.

Other Matters

The condensed consolidated interim statements of profit or loss, comprehensive income for three-month and nine-month periods ended September 30, 2022, changes in equity and cash flows for the nine-month periods ended September 30, 2022, which were marked with comparative figures, were reviewed by another auditor. The review report dated November 14, 2022, stated that there were no discrepancies found in the condensed consolidated interim financial statements presented fairly in terms of materiality, in accordance with the K-IFRS No. 1034, *Interim Financial Reporting*.

Furthermore, the consolidated statement of financial position of the Group as at December 31, 2022, The consolidated statements of profit or loss, comprehensive income, changes in equity and cash flows for the accounting year ending on the same date (not attached to this review report) were audited in accordance with Korean Standards on Auditing by another auditor. In the audit report dated March 9, 2023, an unqualified opinion was expressed.

The consolidated statement of financial position of the Group as at December 31, 2022, attached for comparative purposes does not differ, in all material respects, from the audited consolidated financial statements mentioned above.

A handwritten signature in black ink that reads "Deloitte IDNjin LLC". The signature is written in a cursive, stylized font.

November 14, 2023
Seoul, Korea

This report is effective as of November 14, 2023, the review report date. Certain subsequent events or circumstances, which may occur between the review report date and the time of reading this report, could have a material impact on the accompanying condensed consolidated interim financial statements and notes thereto. Accordingly, the readers of the review report should understand that there is a possibility that the above review report may have to be revised to reflect the impact of such subsequent events or circumstances, if any.

LG Chem, Ltd. and Subsidiaries
Condensed Consolidated Interim Statements of Financial Position
As of September 30, 2023, and December 31, 2022

<i>(In millions of Korean won)</i>	Notes	September 30, 2023 (Unaudited)	December 31, 2022
Assets			
Current assets			
Cash and cash equivalents	3,5,6	₩ 8,880,920	₩ 8,497,882
Trade receivables	3,5,7,31	8,923,809	7,450,395
Other receivables	3,5,7,31	990,100	742,431
Other current financial assets	3,5,8	40,661	9,167
Prepaid income taxes		35,044	52,920
Other current assets	13	947,315	1,013,463
Inventories	9	10,607,763	11,880,631
Assets held for sale	34	222,322	27,480
Total current assets		30,647,934	29,674,369
Non-current assets			
Trade receivables	3,5,7	132,910	120,698
Other receivables	3,5,7	931,445	617,444
Other non-current financial assets	3,5,8	1,625,237	1,237,167
Investments in associates and joint ventures	1,10,33	1,000,322	949,553
Deferred tax assets	28	2,344,046	2,165,557
Property, plant and equipment	11	36,362,766	29,662,743
Intangible assets	12	3,653,492	2,690,203
Investment properties	36	90,945	94,026
Other non-current assets	13,16	710,924	762,063
Total non-current assets		46,852,087	38,299,454
Total assets		₩ 77,500,021	₩ 67,973,823
Liabilities			
Current liabilities			
Trade payables	3,5,31	₩ 5,011,679	₩ 4,756,246
Other payables	3,5,31	4,485,002	4,899,553
Borrowings	3,5,14	4,590,146	3,804,367
Other current financial liabilities	3,5,8	24,699	7,271
Provisions	15	587,648	1,026,446
Income tax payables		151,691	626,226
Other current liabilities	17,35	1,178,840	1,339,454
Liabilities of disposal groups as held for sale	34	20,219	-
Total current liabilities		16,049,924	16,459,563
Non-current liabilities			
Other payables	3,5	108,512	43,708
Borrowings	3,5,14	17,317,510	12,160,152
Other non-current financial liabilities	3,5,8	532,337	33,319
Provisions	15	890,090	533,414
Net defined benefit liabilities	13,16	21,245	19,470
Deferred tax liabilities	28	824,788	838,725
Other non-current liabilities	17,35	390,409	404,345
Total non-current liabilities		20,084,891	14,033,133
Total liabilities		36,134,815	30,492,696

(Continued)

LG Chem, Ltd. and Subsidiaries
Condensed Consolidated Interim Statements of Financial Position (Continued)
As of September 30, 2023, and December 31, 2022

<i>(In millions of Korean won)</i>	Notes	September 30, 2023 (Unaudited)	December 31, 2022
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		894,945	366,916
Retained earnings	20	19,782,620	19,142,263
Equity attributable to owners of the Parent Company		32,651,500	31,450,572
Non-controlling interests	1	8,743,706	6,030,555
Total equity		41,365,206	37,481,127
Total liabilities and equity		₩ 77,500,021	₩ 67,973,823

(Concluded)

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

LG Chem, Ltd. and Subsidiaries
Condensed Consolidated Interim Statements of Profit or Loss
Three-Month and Nine-Month Periods Ended September 30, 2023 and 2022

(In millions of Korean won, except per share amounts)

	Notes	Period Ended September 30			
		2023		2022	
		(Unaudited)		(Unaudited)	
		Three months	Nine months	Three months	Nine months
Revenue	22, 31, 33, 35	₩ 13,494,826	₩ 42,114,983	₩ 13,984,622	₩ 37,327,081
Cost of sales	22, 23, 31	(11,177,109)	(35,079,485)	(11,235,377)	(29,650,108)
Gross profit		2,317,717	7,035,498	2,749,245	7,676,973
Other operating income	22	215,587	426,797	-	-
Selling and administrative expenses	22, 23, 31	(1,672,878)	(5,180,526)	(1,837,864)	(4,906,991)
Operating profit	22, 33	860,426	2,281,769	911,381	2,769,982
Finance income	5, 25	455,188	1,430,930	639,661	1,182,013
Finance costs	5, 25	(665,969)	(1,539,994)	(820,053)	(1,458,292)
Share of net profit of associates and joint ventures accounted for using the equity method	10	(6,467)	(25,690)	(13,652)	(23,323)
Other non-operating income	5, 26	341,771	1,391,178	1,039,053	1,862,108
Other non-operating expenses	5, 27	(408,706)	(1,257,848)	(831,698)	(1,534,197)
Profit before income tax expense	32	576,243	2,280,345	924,692	2,798,291
Income tax expense	28	(13,941)	(371,572)	(240,336)	(714,057)
Profit from continuing operations		562,302	1,908,773	684,356	2,084,234
Profit from discontinued operations	34	22,742	16,133	29,520	117,179
Profit for the period		₩ 585,044	₩ 1,924,906	₩ 713,876	₩ 2,201,413
Profit is attributable to:					
Owners of the Parent Company					
Profit from continuing operations		₩ 397,172	₩ 1,402,151	₩ 584,468	₩ 1,844,423
Profit from discontinued operations		23,045	17,096	29,904	117,464
		420,217	1,419,247	614,372	1,961,887
Non-controlling interests					
Profit from continuing operations		165,130	506,622	99,888	239,811
Loss from discontinued operations		(303)	(963)	(384)	(285)
		164,827	505,659	99,504	239,526
Earnings per share for profit					
attributable to the equity holders of the Parent Company (in Korean won)	29				
Basic and diluted earnings per ordinary share		5,364	18,127	7,881	25,177
Basic and diluted earnings per preferred share		5,414	18,177	7,931	25,277
Earnings per share for profit from continuing operations attributable to the equity holders of the Parent Company (in Korean won)	29				
Basic and diluted earnings per ordinary share		5,069	17,908	7,497	23,670
Basic and diluted earnings per preferred share		5,119	17,958	7,547	23,720

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

LG Chem, Ltd. and Subsidiaries
Condensed Consolidated Interim Statements of Comprehensive Income
Three-Month and Nine-Month Periods Ended September 30, 2023 and 2022

(In millions of Korean won)

	Note	Period Ended September 30			
		2023 (Unaudited)		2022 (Unaudited)	
		Three months	Nine months	Three months	Nine months
Profit for the period		₩ 585,044	₩ 1,924,906	₩ 713,876	₩ 2,201,413
Other comprehensive income					
<i>1. Items that will not be reclassified to profit or loss</i>					
(1) Remeasurements of net defined benefit liability	16	2,340	5,323	432,454	425,770
(2) (Loss) gain on valuation of financial assets at fair value through other comprehensive income		(55,383)	(88,036)	(10,983)	44
(3) Shares of remeasurements of net defined benefit liabilities of associates		-	461	-	(307)
(4) Income tax relating to these items		15,779	23,958	(115,431)	(117,072)
<i>2. Items that may be subsequently reclassified to profit or loss</i>					
(1) Exchange differences on translation of foreign operations		362,188	881,002	797,268	1,284,965
(2) Cash flow hedge		(1,701)	(17,176)	(15,715)	(33,119)
(3) Shares of other comprehensive income of associates and joint ventures		5,713	34,625	50,099	73,245
(4) Income tax relating to these items		942	11,955	1,095	(37,161)
Other comprehensive income for the period, net of tax		329,878	852,112	1,138,787	1,596,365
Total comprehensive income for the period		₩ 914,922	₩ 2,777,018	₩ 1,852,663	₩ 3,797,778
Total comprehensive income for the period is attributable to:					
Owners of the Parent Company		₩ 577,079	₩ 1,951,221	₩ 1,440,350	₩ 3,095,250
Non-controlling interest		337,843	825,797	412,313	702,528

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

LG Chem, Ltd. and Subsidiaries

Condensed Consolidated Interim Statements of Changes in Equity

For the Nine-Month Periods Ended September 30, 2023 and 2022

<i>In millions of Korean won)</i>	Note	Attributable to owners of the Parent Company					Total	Non-controlling interests	Total equity
		Share capital	Capital surplus	Other components of equity	Accumulated other comprehensive income (loss)	Retained earnings			
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 period		-	-	-	-	1,961,887	1,961,887	239,526	2,201,413
Remeasurements of net defined benefit liabilities	16	-	-	-	-	286,292	286,292	22,379	308,671
Exchange differences on translation of foreign operations		-	-	-	805,681	-	805,681	435,504	1,241,185
Gain on valuation of financial assets at fair value through other comprehensive income		-	-	-	(1,803)	-	(1,803)	1,875	72
Cash flow hedge		-	-	-	(21,388)	-	(21,388)	(5,112)	(26,500)
Others		-	-	-	64,888	(307)	64,581	8,356	72,937
Total comprehensive income for the period		-	-	-	847,378	2,247,872	3,095,250	702,528	3,797,778
Transactions with owners:									
Dividends	30	-	(30,428)	-	-	(935,275)	(965,703)	(125,206)	(1,090,909)
Changes in interest in subsidiaries		-	8,711,480	-	-	-	8,711,480	3,297,254	12,008,734
Increase in paid-in capital of a subsidiary		-	-	-	-	-	-	789,140	789,140
Others		-	-	-	-	515	515	(136)	379
Total transactions with owners		-	8,681,052	-	-	(934,760)	7,746,292	3,961,052	11,707,344
Balance at September 30, 2022 (Unaudited)		₩ 391,406	₩ 11,377,437	₩ (37,310)	₩ 1,398,732	₩ 19,405,061	₩ 32,535,326	₩ 6,179,784	₩ 38,715,110
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 period		-	-	-	-	1,419,247	1,419,247	505,659	1,924,906
Remeasurements of net defined benefit liabilities	16	-	-	-	-	3,484	3,484	450	3,934
Exchange differences on translation of foreign operations		-	-	-	567,576	-	567,576	321,081	888,657
Loss on valuation of financial assets at fair value through other comprehensive income		-	-	-	(61,108)	-	(61,108)	(1,581)	(62,689)
Cash flow hedge		-	-	-	(10,537)	-	(10,537)	(2,338)	(12,875)
Others		-	-	-	32,098	461	32,559	2,526	35,085
Total comprehensive income for the period		-	-	-	528,029	1,423,192	1,951,221	825,797	2,777,018
Transactions with owners:									
Dividends	30	-	-	-	-	(783,135)	(783,135)	(92,872)	(876,007)
Increase in paid-in capital of a subsidiary		-	2,542	-	-	-	2,542	1,980,551	1,983,093
Others		-	-	-	-	300	300	(325)	(25)
Total transactions with owners		-	2,542	-	-	(782,835)	(780,293)	1,887,354	1,107,061
Balance at September 30, 2023 (Unaudited)		₩ 391,406	₩ 11,572,098	₩ (19,569)	₩ 894,945	₩ 19,782,620	₩ 32,621,500	₩ 8,743,706	₩ 41,365,206

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

LG Chem, Ltd. and Subsidiaries
Condensed Consolidated Interim Statements of Cash Flows
For the Nine-Month Periods Ended September 30, 2023 and 2022

<i>(In millions of Korean won)</i>	Note	2023 (Unaudited)	2022 (Unaudited)
Cash flows from operating activities			
Cash generated from operations	32 ₩	5,509,308	₩ 94,447
Interest received		216,618	109,100
Interest paid		(474,179)	(213,069)
Dividends received		22,121	5,289
Income taxes paid		(1,143,645)	(1,526,575)
Net cash inflow (out flow) from operating activities		4,130,223	(1,530,808)
Cash flows from investing activities			
Decrease in other receivables		417,520	253,127
Proceeds from disposal of other financial assets		5,737	39,650
Proceeds from disposal of property, plant and equipment		66,839	79,136
Proceeds from disposal of intangible assets		1,398	21,342
Government grants received		298,839	120,135
Net cash inflows from changes in scope of consolidation		-	49,780
Proceeds from disposal of assets held for sale		20,253	31,766
Increase in other receivables		(261,740)	(4,359,609)
Acquisition of investments in associates and joint ventures		(69,334)	(504,022)
Acquisition of other financial assets		(253,420)	(422,304)
Acquisition of property, plant and equipment		(9,257,057)	(5,955,052)
Acquisition of intangible assets		(114,735)	(116,173)
Cash outflows from transfer of business		(702,227)	(8,986)
Other cashflows from investing activities		(4,431)	-
Net cash outflow from investing activities		(9,852,358)	(10,771,210)
Cash flows from financing activities			
Proceeds from borrowings		10,898,293	4,340,531
Capital contribution from non-controlling interests		1,983,093	13,409,396
Settlement of derivative instruments transactions		-	5,712
Repayments of borrowings and others		(6,100,347)	(3,597,413)
Dividends paid		(906,765)	(1,036,815)
Net cash inflow from financing activities		5,874,274	13,121,411
Net increase in cash and cash equivalents		152,139	819,393
Cash and cash equivalents at the beginning of the period		8,497,882	3,760,834
Effects of exchange rate changes on cash and cash equivalents		251,059	331,647
Cash and cash equivalents included in disposal groups classified as held for sale		(20,160)	-
Cash and cash equivalents at the end of the period	₩	8,880,920	₩ 4,911,874

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

LG Chem, Ltd. and Subsidiaries

Notes to the Condensed Consolidated Interim Financial Statements

As of September 30, 2023, and December 31, 2022, and for the

Three-Month and Nine-Month Periods Ended September 30, 2023 and 2022

1. GENERAL INFORMATION:

General information about LG Chem, Ltd. (the “Parent Company”) and its 70 subsidiaries (the “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 at September 30, 2023, the Group has its manufacturing facilities in Yeosu, Daesan, Ochang, Cheongju, Naju, Iksan, Paju, Osong, Onsan, Gimcheon and overseas sites.

As at September 30, 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 at September 30, 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 1% more than those paid to ordinary shareholders.

1.2 Business Overview

The Group is engaged in Petrochemical, Energy solutions and Advanced materials businesses, and is 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 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. was established through the split-off of the energy solution business from the Parent Company on December 1, 2020, and its subsidiaries mainly manufacture and supply batteries ranging from IT and new application batteries for mobile phones and laptop computers, to automotive batteries for electric vehicles and Energy Storage System (“ESS”) batteries. Demand for small-sized batteries for new applications, such as electric tools and electric driving devices, as well as traditional IT devices is increasing recently, and the automotive battery business is also expected to expand rapidly due to an increasing demand for the batteries 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 materials business manufactures and supplies various kinds of IT materials, such as automotive materials, OLED film, semiconductor materials, OLED materials, battery materials and others, including 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 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 were acquired by the Group in 2016 to manufacture and sell crop protection products, seeds, fertilizers and others. The crop protection business provides high-value products, such as environment-friendly pesticides. The fertilizer business leads to developing of next-generation fertilizers, such as ecofriendly organic and functional fertilizers and potting soil. The seed business puts priority on retaining various genetic resources and developing rare breeds with high profit in order to remain competitive in a future food industry.

1.3 Consolidated Subsidiaries, Associates and Joint Ventures

	Percentage of ownership held by the Group (%)		Business location	Closing month	Business activities
	September 30, 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
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.	70	70	China	December	Polarizer sheet manufacturing and sales

	Percentage of ownership held by the Group (%)		Business location	Closing month	Business activities
	September 30, 2023	December 31, 2022			
LG-HY BCM Co., Ltd. ⁸	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 drugs sales and research
PT LGChem Indonesia ⁹	100	-	Indonesia	December	Sales and trading
TW Biomassenergy Co., Ltd ¹⁰	60	-	Korea	December	Plant utility manufacturing and sales
FarmHannong Co., Ltd. ¹²	100	100	Korea	December	Agricultural pesticide manufacturing and sales
Farmhannong America, Inc. ¹²	100	100	USA	December	Agricultural pesticide sales
FarmHannong(Thailand) Ltd. ¹²	100	100	Thailand	December	Research and development (“R&D”) on seeds
FARMHANNONG(MALAYSIA) SDN. BHD. ¹²	100	100	Malaysia	December	Agricultural pesticide licensing
PT FARM HANNONG INDONESIA ¹²	100	100	Indonesia	December	Agricultural pesticide licensing
FarmHannong do Brasil Limitada ¹²	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, 14}	41	41	USA	December	Automotive battery manufacturing and sales
Ultium Cells LLC ^{1, 14}	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, Incorporated ¹	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	82	-	USA	December	ESS Manufacturing and sales
Nextstar Energy Inc. ¹	42	-	Canada	December	Automotive battery manufacturing and sales
LG Energy Solution Fund II LLC ¹	82	-	USA	December	Investments in venture companies
Associates					
TECHWIN Co., Ltd.	20	20	Korea	December	Environment solution and construction of chemical plant
LG Chem Life Sciences Poland Ltd.	100	100	Poland	December	Pharmaceutical products sales

	Percentage of ownership held by the Group (%)		Business location	Closing month	Business activities
	September 30, 2023	December 31, 2022			
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. ¹¹	49	49	Korea	December	Battery materials manufacturing and sales
VINFAST LITHIUM BATTERY PACK LLC. ^{1, 15}	-	29	Vietnam	December	Battery manufacturing and sales
Jiangxi VL Battery., Ltd. ¹	28	28	China	December	Battery manufacturing and sales
Sam-a Aluminium Company, Limited ^{1, 16}	8	-	Korea	December	Aluminium sales and manufacturing
NEXPO Co., Ltd ^{1, 17}	16	-	Korea	December	Battery products manufacturing and sales
Joint ventures¹³					
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 at September 30, 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 at September 30, 2023, Ningbo LG Yongxing Chemical Co., Ltd. owns 100% of Ningbo Zhenhai LG Yongxing Trading Co., Ltd.'s shares.

³ As at September 30, 2023, LG Chemical India Pvt. Ltd. owns 100% of LG Polymers India Pvt. Ltd.'s shares.

⁴ As at September 30, 2023, LG Chem (China) Investment Co., Ltd. owns 100% of LG Chem China Tech Center's shares.

⁵ During the nine-month period ended September 30, 2023, LG Chemical India Pvt. Ltd. newly acquired shares of LG Polymers India Pvt. Ltd. for ₩12,390 million.

⁶ During the nine-month period ended September 30, 2023, the Group additionally acquired shares of LG CHEM FUND I LLC for ₩5,966 million.

⁷ During the nine-month period ended September 30, 2023, LG Chem Life Science Innovation Center, Inc. invested ₩701,103 million for a 100% share in Aveo Pharmaceuticals, Inc.

⁸ During the nine-month period ended September 30, 2023, the Group additionally acquired shares of LG BCM for ₩40,128 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.

⁹ During the nine-month period ended September 30, 2023, the Group invested ₩886 million for a 100% share in PT LG CHEM INDONESIA.

¹⁰ During the nine-month period ended September 30, 2023, the Group invested ₩3,600 million for a 60% share in TW Biomassenergy Co., Ltd.

¹¹ During the nine-month period ended September 30, 2023, the Group additionally acquired shares of KOREA PRECURSOR CO., LTD. for ₩20,384 million.

¹² As at September 30, 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.

¹³ 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.

- ¹⁴ 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 the 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.
- ¹⁵ During the nine-month period ended September 30, 2023, the Group disposed 100% ownership shares of VINFAST LITHIUM BATTERY PACK LLC.
- ¹⁶ During the nine-month period ended September 30, 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 significant influence
- ¹⁷ During the nine-month period ended September 30, 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 significant influence.

1.4 Summarized Financial Information of Subsidiaries, Associates and Joint Ventures

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

(In millions of Korean won)	September 30, 2023			2023	
	Assets	Liabilities	Equity	Revenue	Profit (loss) for the period
Subsidiaries					
LG Energy Solution, Ltd. and its subsidiaries ¹	₩ 45,168,509	₩ 20,500,543	₩ 24,667,966	₩ 25,744,146	₩ 1,447,658
Ningbo LG Yongxing Chemical Co., Ltd.	1,010,367	226,421	783,946	1,387,942	37,754
Ningbo Zhenhai LG Yongxing Trade Co., Ltd.	₩ 7,246	₩ 613	₩ 6,633	₩ 13,633	₩ 194
LG Chem America, Inc.	402,963	351,839	51,124	765,663	(871)
LG Chemical India Pvt. Ltd.	62,967	4	62,963	-	68
LG Polymers India Pvt. Ltd.	82,839	55,365	27,474	(21)	(6,599)
LG Chemical (Guangzhou) Engineering Plastics Co., Ltd.	111,925	30,314	81,611	136,260	11,046
LG Chem (Taiwan), Ltd. ^{4,5}	68,331	11,183	57,148	24,043	6,739
Tianjin LG Bohai Chemical Co., Ltd.	464,441	68,024	396,417	401,504	15,508
Tianjin LG BOTIAN Chemical Co., Ltd.	54,948	23,871	31,077	113,296	2,956
LG Chem (China) Investment Co., Ltd.	1,348,119	960,326	387,793	61,199	9,405
LG Chem (Tianjin) Engineering Plastics Co., Ltd.	59,275	11,045	48,230	56,172	6,130
LG Chem Europe GmbH	391,658	294,588	97,070	676,228	2,979
LG Chem Poland Sp. z o.o.	256,833	134,079	122,754	288,230	21,604
LGC Petrochemical India Private Ltd.	6,522	1,223	5,299	4,721	546
HAENGBOKNURI CO., Ltd.	4,866	1,849	3,017	7,428	121
LG CHEM TK Kimya SANAYI VE TIC. Ltd. STI.	14,171	16,109	(1,938)	64,705	(2,742)
LG Chem Japan Co., Ltd.	5,380	1,114	4,266	4,680	440
LG NanoH2O, LLC	57,181	10,574	46,607	46,085	5,553
LG Chem (Chongqing) Engineering Plastics Co., Ltd.	54,112	10,363	43,749	57,724	7,473
LG Chem (HUIZHOU) Petrochemical Co., Ltd.	493,041	120,135	372,906	561,334	(25,611)
LG Chem Life Sciences India Pvt. Ltd.	1,380	229	1,151	460	114
LG Jiansheng Life Sciences (Beijing) Co., Ltd.	16,764	16,249	515	31,827	1,606

(In millions of Korean won)	September 30, 2023			2023	
	Assets	Liabilities	Equity	Revenue	Profit (loss) for the period
LG Chem Life Sciences (Thailand) Ltd.	28,657	11,322	17,335	38,114	635
LG Chem Hai Phong Vietnam Company Ltd. ⁵	13,521	941	12,580	-	568
LG Chem Mexico S.A. de C.V.	4,461	1,997	2,464	3,382	395
LG Chem Hai Phong Engineering Plastics Ltd.	30,825	8,869	21,956	33,640	4,229
LG Chem (Guangzhou) Information & Electronics Materials Co., Ltd. ⁵	299,386	85,412	213,974	50,776	3,958
LEYOU NEW ENERGY MATERIALS(WUXI) Co., Ltd	976,673	239,180	737,493	1,539,396	152,206
LG Chem Fund I LLC	94,843	58	94,785	-	(1,274)
Uniseal, Inc.	62,223	10,388	51,835	80,851	10,655
LG Chem Life Science Innovation Center, Inc.	53,950	31,308	22,642	10,399	876
LG Chem Asia Pte. Ltd.	51,296	49,662	1,634	3,884	265
LG Chem China Tech Center	35,761	1,246	34,515	7,792	204
LG PETRONAS CHEMICALS Malaysia Sdn.Bhd.	299,212	237,853	61,359	-	(8,159)
LG Chem Hangzhou Advanced Materials Co., Ltd. ^{5, 6}	32,166	3,337	28,829	495	(2,867)
LG-HY BCM Co., Ltd.	539,553	364,066	175,487	172	(4,253)
LG Chem Ohio Petrochemical, Inc.	54,269	30,550	23,719	-	(1,527)
LG Chem VietNam Co., Ltd.	791	212	579	881	111
LG Chem Malaysia SDN.BHD.	1,089	307	782	1,565	139
LG Chem BRASIL INTERMEDIACAO DE NEGOCIOS DO SETOR QUIMICO LTDA.	1,950	538	1,412	2,435	88
Aveo Pharmaceuticals. Inc. ²	43,939	55,602	(11,663)	143,933	(15,736)
PT LG CHEM INDONESIA ²	1,022	63	959	655	91
TW Biomassenergy Co., Ltd. ²	6,053	170	5,883	-	(117)
FarmHannong Co., Ltd and its subsidiaries ¹	1,158,204	688,370	469,834	632,758	30,615
Associates					
TECHWIN Co., Ltd.	138,035	66,619	71,416	88,276	(9,753)
LG Life Sciences Poland Ltd.	289	106	183	126	5
KOREA PRECURSOR CO., Ltd.	139,181	60,373	78,808	-	(3,150)
HUAJIN NEW ENERGY MATERIALS(QUZHOU)CO., LTD.	491,919	327,864	164,055	539,618	(2,754)
TL Chemical Co., Ltd	122,237	-	122,237	-	2,694
Sam-a Aluminium Company, Limited ²	418,848	161,944	256,904	205,809	3,493
NEXPO Co., Ltd ²	14,295	2,522	11,773	251	(728)
Joint ventures					
SEETEC Co., Ltd.	343,068	61,708	281,360	604,680	14,514
LG Toray Hungary Battery Separator Kft.	783,109	6,071	777,038	12,743	(11,280)
PT.HLI Green Power	1,116,841	659,781	457,060	528	(11,716)
(In millions of Korean won)	December 31, 2022			2022	
	Assets	Liabilities	Equity	Revenue	Profit (loss) for the period
Subsidiaries					
LG Energy Solution, Ltd and its subsidiaries ¹	₩ 38,299,445	₩ 17,705,683	₩ 20,593,762	₩ 17,061,066	₩ 504,258
Ningbo LG Yongxing Chemical Co., Ltd.	977,939	216,923	761,016	1,737,216	114,693
Ningbo Zhenhai LG Yongxing Trade Co., Ltd.	6,547	208	6,339	21,174	388
LG Chem America, Inc.	364,217	315,018	49,199	1,060,989	1,389
LG Chemical India Pvt. Ltd.	63,069	76	62,993	-	(150)
LG Polymers India Pvt. Ltd.	56,108	36,817	19,291	2,111	(3,858)
LG Chemical (Guangzhou) Engineering Plastics Co.,Ltd.	103,121	31,869	71,252	169,659	1,431

	December 31, 2022			2022	
(In millions of Korean won)	Assets	Liabilities	Equity	Revenue	Profit (loss) for the period
LG Chem (Taiwan), Ltd. ^{4,5}	66,276	16,344	49,932	21,166	45,160
Tianjin LG Bohai Chemical Co., Ltd.	506,683	91,577	415,106	491,681	55,276
Tianjin LG BOTIAN Chemical Co., Ltd.	52,147	21,909	30,238	130,016	3,044
LG Chem (China) Investment Co., Ltd.	965,394	595,580	369,814	58,924	6,916
LG Chem (Tianjin) Engineering Plastics Co., Ltd.	54,521	7,617	46,904	61,431	4,064
LG Chem Europe GmbH	416,423	327,179	89,244	817,458	9,949
LG Chem Poland Sp. z o.o.	251,051	156,649	94,402	249,114	5,957
LGC Petrochemical India Private Ltd.	5,708	1,208	4,500	4,675	600
HAENGBOKNURI CO., LTD.	4,484	1,588	2,896	6,752	(116)
LG CHEM TK Kimya SANAYI VE TIC. Ltd. STI.	10,320	9,973	347	71,436	35
LG Chem Japan Co., Ltd.	5,074	1,012	4,062	4,200	551
LG NanoH2O, LLC	59,062	20,546	38,516	54,211	5,560
LG Chem (Chongqing) Engineering Plastics Co., Ltd.	45,022	9,280	35,742	54,980	2,730
LG Chem (HUIZHOU) Petrochemical Co., Ltd.	545,010	116,473	428,537	742,871	18,664
LG Chem Life Sciences India Pvt. Ltd.	2,015	1,034	981	4,895	132
LG Jiansheng Life Sciences (Beijing) Co., Ltd.	16,953	17,949	(996)	27,230	(6,006)
LG Chem Life Sciences (Thailand) Ltd.	31,712	15,120	16,592	31,702	560
LG Chem Hai Phong Vietnam Company Ltd. ⁵	16,224	4,505	11,719	-	2,178
LG Chem Mexico S.A. de C.V.	3,811	1,877	1,934	2,275	328
LG Chem Hai Phong Engineering Plastics Ltd.	33,254	15,968	17,286	27,588	353
LG Chem (Guangzhou) Information & Electronics Materials Co., Ltd. ⁵	281,292	72,768	208,524	35,392	1,439
LEYOU NEW ENERGY MATERIALS(WUXI) CO., LTD.	1,308,350	640,026	668,324	1,656,768	295,965
LG Chem Fund I LLC	77,965	20	77,945	-	(2,201)
Uniseal, Inc.	47,936	9,428	38,508	68,358	3,170
LG Chem Life Science Innovation Center, Inc.	21,438	1,477	19,961	6,258	633
LG Chem Asia Pte. Ltd.	47,745	46,430	1,315	3,045	215
LG Chem China Tech Center	37,725	3,941	33,784	3,373	557
Shanjin Optoelectronics (Taiwan) Co., Ltd. ^{3,4}	-	-	-	-	56
LG PETRONAS CHEMICALS Malaysia Sdn.Bhd.	204,444	134,990	69,454	-	(1,780)
LG Chem Hangzhou Advanced Materials Co., Ltd. ^{5,6}	46,375	15,645	30,730	-	28
LG-HY BCM Co., Ltd.	175,519	125,909	49,610	-	(2,351)
LG Chem Ohio Petrochemical, Inc.	23,842	15	23,827	-	(252)
LG Chem VietNam Co., Ltd	747	291	456	726	71
LG Chem Malaysia SDN.BHD.	1,043	399	644	1,408	91
LG Chem BRASIL INTERMEDIACAO DE NEGOCIOS DO SETOR QUIMICO LTDA.	1,287	107	1,180	2,094	454
FarmHannong Co., Ltd and its subsidiaries ¹	1,120,997	682,253	438,744	657,965	67,150
Associates					
TECHWIN Co., Ltd.	137,123	58,470	78,653	48,351	(9,108)
LG Chem Life Sciences Poland Ltd.	235	69	166	122	30
KOREA PRECURSOR CO., LTD. ²	47,838	7,352	40,486	-	(102)
HUAJIN NEW ENERGY MATERIALS(QUZHOU)CO., LTD.	459,440	292,204	167,236	360,929	(5,351)
TL Chemical Co., Ltd	118,942	155	118,787	-	(2,350)
VINFAST LITHIUM BATTERY PACK LLC.	13,297	5,888	7,409	8,830	(2,739)
Jiangxi VL Battery., Ltd.	82,311	43,170	39,141	1,452	(14,087)
Joint ventures					

(In millions of Korean won)	December 31, 2022			2022	
	Assets	Liabilities	Equity	Revenue	Profit (loss) for the period
VINA Plasticizer Chemical Co., Ltd. ⁷	88,554	57,091	31,463	140,475	609
SEETEC Co., Ltd.	338,100	61,274	276,826	515,425	8,184
LG Toray Hungary Battery Separator Kft. ²	751,781	2,472	749,309	38	3,730
PT.HLI Green Power	667,930	227,305	440,625	-	(4,113)

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 nine-month period ended September 30, 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.

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

<i>(In millions of Korean won)</i>	September 30, 2023		December 31, 2022	
Percentage of ownership held by non-controlling interests		18.2%		18.2%
Accumulated non-controlling interests	₩	7,878,599	₩	5,263,729

- Profit and dividends attributable to non-controlling interests for the nine-month periods ended September 30, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	2023		2022	
Profit allocated to non-controlling interests	₩	415,289	₩	88,667
Dividends paid to non-controlling interests		-		-

- 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>	September 30, 2023		December 31, 2022	
Current assets	₩	18,568,865	₩	18,804,269
Non-current assets		26,599,644		19,495,176
Total assets		<u>45,168,509</u>		<u>38,299,445</u>
Current liabilities		11,290,328		11,444,923
Non-current liabilities		9,210,215		6,260,760
Total liabilities		<u>20,500,543</u>		<u>17,705,683</u>
Total equity	₩	24,667,966	₩	20,593,762

- Summarized condensed consolidated interim statements of comprehensive income of subsidiaries with material non-controlling interests for the nine-month periods ended September 30, 2023 and 2022, are as follows (before elimination of intercompany transaction):

<i>(In millions of Korean won)</i>	2023		2022	
Revenue	₩	25,744,146	₩	17,061,066
Profit for the period		1,447,658		504,258
Total comprehensive income		2,183,472		1,572,666

- Summarized condensed consolidated interim statements of cash flows of subsidiaries with material non-controlling interests for the nine-month periods ended September 30, 2023 and 2022, are as follows (before elimination of intercompany transaction):

<i>(In millions of Korean won)</i>	2023	2022
Cash flows from operating activities	₩ 1,772,162	₩ (1,427,127)
Cash flows from investing activities	(6,864,330)	(8,723,543)
Cash flows from financing activities	3,896,450	10,857,724
Net (decrease) increase in cash and cash equivalents	(1,195,718)	707,054
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	132,437	199,540
Cash and cash equivalents at the end of period	₩ 4,874,686	₩ 2,189,474

1.6 Changes in Scope for Consolidation

Subsidiaries newly included in the consolidation for the nine-month period ended September 30, 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

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES:

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

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 ("K-IFRSs"). The accompanying condensed consolidated interim financial statements have been condensed, restructured and translated into English from the Korean language financial statements.

2.1 Basis of Preparation

The Group's condensed consolidated interim financial statements for the nine-month period ended September 30, 2023, have been prepared in accordance with K-IFRS 1034 *Interim Financial Reporting*. These condensed consolidated interim financial statements have been prepared in accordance with the K-IFRS, which is effective or early adopted as at September 30, 2023.

(a) New and amended standards adopted by the Group

The Group has applied the following standards for the first time for its annual reporting period commencing on 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.

-K-IFRS 1001 Presentation of Financial Statements - Disclosure of financial liabilities with condition to adjust exercise price (Amendment)

The amendment requires 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 (Amendment)

The amendment replaces the definition of a change in accounting estimates with the definition of accounting estimates. Under the new definition, accounting estimates are “monetary amounts in financial statements that are subject to measurement uncertainty.”

The definition of a change in accounting estimates was deleted. However, the International Accounting Standards Board retained the concept of changes in accounting estimates in the standard with the following clarifications:

- A change in accounting estimate that results from new information or new developments is not the correction of an error.
- The effects of a change in an input or a measurement technique used to develop an accounting estimate are changes in accounting estimates if they do not result from the correction of prior-period errors.

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

The amendment introduces a further exception from the initial recognition exemption. Under the amendment, 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 a liability in a transaction that is not a business combination and affects neither accounting nor taxable profit. For example, this may arise upon recognition of a lease liability and the corresponding right-of-use asset applying K-IFRS 1116 at the commencement date of a lease.

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.

The board also adds an illustrative example to K-IFRS 1012 that explains how the amendments are applied.

The amendments apply to transactions that occur on or after the beginning of the earliest comparative period presented. In addition, at the beginning of the earliest comparative period an entity recognizes:

- A deferred tax asset (to the extent that it is probable that taxable profit will be available against which the deductible temporary difference can be utilized) and a deferred tax liability for all deductible and taxable temporary differences associated with:
 - Right-of-use assets and lease liabilities
 - Decommissioning, restoration and similar liabilities and the corresponding amounts recognized as part of the cost of the related asset
- The cumulative effect of initially applying the amendments as an adjustment to the opening balance of retained earnings (or other component of equity, as appropriate) at that date.

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

The following new and amended accounting standards and interpretations that have been published are not mandatory for September 30, 2023, reporting periods and have not been early adopted by the Group.

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

The amendments clarify that liabilities are classified as either current or non-current, depending on the substantive rights that exist at the end of the reporting period. Classification is unaffected by the likelihood that an entity will exercise right to defer settlement of the liability or the expectations of management. Also, the settlement of liability includes the transfer of the entity's own equity instruments; however, it would be excluded if an option to settle them by the entity's own equity instruments, i.e., compound financial instruments, meets the definition of equity instruments and is recognized separately from the liability.

The 2023 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.

The 2023 amendments also specify that the right to defer settlement 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. The amendments should be applied for annual periods beginning on or after January 1, 2024, and earlier application is permitted.

The Group anticipates that the application of the amendments will not have a significant impact on the its condensed consolidated interim financial statements.

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 co-operation 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 of recognized assets and liabilities.

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

As at September 30, 2023, and December 31, 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>	September 30, 2023		December 31, 2022	
	Assets	Liabilities	Assets	Liabilities
USD	₩ 7,206,696	₩ 12,881,821	₩ 5,518,144	₩ 8,164,815
EUR	534,222	4,628,950	478,624	5,044,754
JPY	20,699	129,106	17,686	145,211
CNY and others	379,375	13,534	230,763	11,419

As at September 30, 2023, and December 31, 2022, if the Group's functional currency had weakened/strengthened by 10% against the US dollar, etc., with all other variables held constant, profit before income tax would have been affected as follows:

<i>(In millions of Korean won)</i>	September 30, 2023		December 31, 2022	
	10% Increase	10% Decrease	10% Increase	10% Decrease
USD	₩ (448,581)	₩ 448,581	₩ (75,555)	₩ 75,555
EUR	(387,101)	387,101	(418,930)	418,930
JPY	(10,839)	10,839	(12,603)	12,603
CNY and others	39,294	(39,294)	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.

As at September 30, 2023, and December 31, 2022, the Group entered into foreign currency forward and currency swap contracts to manage risk from changes in exchange rates and the details are as follows:

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

		September 30, 2023							
		Contract amount	Contract exchange rate	Contract inception date	Contract maturity	Book amount			
Contractor						Assets	Liabilities		
Currency forward	Industrial and Commercial Bank of China	USD 158	1,218.70	2022.04.22	2024.02.01	₩	-	₩	18,311
	Shinhan Bank	USD 500	1,135.60	2020.10.14	2024.10.15		86,263		-
	KB Kookmin Bank	USD 500	1,102.83	2020.11.24	2029.04.16		68,342		-
Currency swap	SMBC	USD 200	1,118.00	2021.05.28	2024.05.28		40,620		-
	KDB Bank	USD 130	1,135.60	2021.06.24	2025.06.24		34,049		-
	KDB Bank	USD 35	1,135.60	2021.06.24	2026.06.24		10,219		-
	Shinhan Bank	USD 300	1,131.80	2021.07.07	2026.07.07		44,654		-
	Woori Bank	USD 100	1,131.80	2021.07.07	2026.07.07		15,146		-
	Industrial and Commercial Bank of China	USD 100	1,131.80	2021.07.07	2026.07.07		15,248		-
	Shinhan Bank	USD 100	1,131.80	2021.07.07	2031.07.07		11,755		-
	Woori Bank	USD 200	1,131.80	2021.07.07	2031.07.07		24,213		-
	KDB Bank	USD 200	1,131.80	2021.07.07	2031.07.07		24,264		-
	KDB Bank	USD 250	1,289.70	2022.06.15	2025.06.15		16,433		-
	Shinhan Bank	USD 110	1,289.70	2022.06.15	2027.06.15		7,690		-
	The Export- Import Bank of Korea	USD 200	1,305.90	2022.07.14	2025.07.14		2,491		-
	Shinhan Bank	USD 100	1,305.90	2022.07.14	2025.07.14		1,252		-
	KDB Bank	USD 200	1,233.40	2023.01.26	2025.01.26		24,600		-
	Shinhan Bank	USD 100	1,233.40	2023.01.26	2026.01.26		12,548		-
	KDB Bank	USD 100	1,233.40	2023.01.26	2026.01.26		12,823		-
	JP Morgan	USD 200	1,337.60	2023.09.25	2026.09.25		736		-
	Shinhan Bank	USD 200	1,337.60	2023.09.25	2026.09.25		-		74
	KDB Bank	USD 400	1,337.60	2023.09.25	2028.09.25		-		5,094
	Woori Bank	USD 200	1,137.60	2023.09.25	2028.09.25		-		2,537

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

December 31, 2022									
	Contractor	Contract amount	Contract exchange rate	Contract inception date	Contract maturity	Book amount			
						Assets		Liabilities	
Currency Forward	Citi Bank	USD 105	1,234.60	2022.04.22	2023.02.01	₩	-	₩	3,348
	Industrial and Commercial Bank of China	USD 158	1,218.70	2022.04.22	2024.02.01		-		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	2029.04.16		41,780		-
	ING	EUR 100	4.7800 ¹	2022.01.05	2023.01.05		-		2,522
Currency swap	SMBC	USD 200	1,118.00	2021.05.28	2024.05.28		22,974		-
	KDB Bank	USD 130	1,135.60	2021.06.24	2025.06.24		26,317		-
	KDB Bank	USD 35	1,135.60	2021.06.24	2026.06.24		7,898		-
	Shinhan Bank	USD 300	1,131.80	2021.07.07	2026.07.07		26,599		-
	Woori Bank	USD 100	1,131.80	2021.07.07	2026.07.07		9,067		-
	Industrial and Commercial Bank of China	USD 100	1,131.80	2021.07.07	2026.07.07		9,175		-
	Shinhan Bank	USD 100	1,131.80	2021.07.07	2031.07.07		6,192		-
	Woori Bank	USD 200	1,131.80	2021.07.07	2031.07.07		12,852		-
	KDB Bank	USD 200	1,131.80	2021.07.07	2031.07.07		12,926		-
	KDB Bank	USD 250	1,289.70	2022.06.15	2025.06.15		-		3,374
	Shinhan Bank	USD 110	1,289.70	2022.06.15	2027.06.15		-		1,700
	The Export-Import Bank of Korea	USD 200	1,305.90	2022.07.14	2025.07.14		-		10,360
	Shinhan Bank	USD 100	1,305.90	2022.07.14	2025.07.14		-		5,003

¹ Cross exchange rate between PLN and EUR.

2) Price risk

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

The table below summarizes the impact of increases/decreases of the listed stock price index on the Group's equity before tax effects as at September 30, 2023, and December 31, 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.

(In millions of Korean won)	September 30, 2023		December 31, 2022	
	10% Increase	10% Decrease	10% Increase	10% Decrease
NASDAQ	₩ 14,292	₩ (14,292)	₩ 2,561	₩ (2,561)
ASX	2,231	(2,231)	1,167	(1,167)
NYSE	3,343	(3,343)	4,416	(4,416)
SZSE	13,188	(13,188)	3,747	(3,747)
HSI	9,431	(9,431)	8,349	(8,349)
KOSPI	15,850	(15,850)	17,667	(17,667)
Total	<u>₩ 58,335</u>	<u>₩ (58,335)</u>	<u>₩ 37,907</u>	<u>₩ (37,907)</u>

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 rate. 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 of interest rate on the Group's equity and post-tax profit for the nine-month periods ended September 30, 2023 and 2022. 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 post-tax profit		Impact on equity	
		September 30, 2023	December 31, 2022	September 30, 2023	December 31, 2022
Increase	Deposits	₩ 16,237	₩ 44,606	₩ 16,237	₩ 44,606
	Borrowings	(45,345)	(41,996)	(45,345)	(41,996)
	Total	<u>₩ (29,108)</u>	<u>₩ 2,610</u>	<u>₩ (29,108)</u>	<u>₩ 2,610</u>
Decrease	Deposits	₩ (16,237)	₩ (44,606)	₩ (16,237)	₩ (44,606)
	Borrowings	45,345	41,996	45,345	41,996
	Total	<u>₩ 29,108</u>	<u>₩ (2,610)</u>	<u>₩ 29,108</u>	<u>₩ (2,610)</u>

(2) Credit risk

Credit risk arises from trade receivables that the Group holds, as well as debt instruments at amortized cost or fair value through other comprehensive income.

1) Trade receivables

The Group applies the simplified approach in 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 on trade receivables as at September 30, 2023, and at December 31, 2022, are as follows. Expected credit losses include forward-looking information.

<i>(In millions of Korean won)</i>	Receivables not past due ¹		Receivables past due, but not impaired ¹		Impaired receivables ²		Total
September 30, 2023							
(trade receivables)							
Gross carrying amount	₩	8,659,405	₩	398,900	₩	1,363	₩ 9,059,668
Expected loss rate		0.0%		0.1%		90.5%	0.0%
Loss allowance	₩	1,151	₩	565	₩	1,233	₩ 2,949
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 on trade receivables for the nine-month period ended September 30, 2023, and for the year ended December 31, 2022, are as follows:

<i>(In millions of Korean won)</i>	Trade receivables	
	September 30, 2023	December 31, 2022
Beginning balance	₩ 5,017	₩ 5,094
Increase in (reversal of) loss allowance recognized in profit or loss	(542)	-
Business combination (Note 37)	-	724
Receivables written off as uncollectible	(1,234)	(849)
Exchange differences	(292)	48
Ending balance	₩ 2,949	₩ 5,017

As at September 30, 2023, the carrying amount of trade receivables representing the maximum exposure to credit risk amounts to ₩9,056,719 million (December 31, 2022: ₩7,571,093 million).

2) Other financial assets at amortized cost

Movements in loss allowance on other financial assets at amortized cost for the nine-month period ended September 30, 2023, and for the year ended December 31, 2022, are as follows:

<i>(In millions of Korean won)</i>	Other receivables	
	September 30, 2023	December 31, 2022
Beginning balance	₩ 682	₩ 2,165
Increase in loss allowance recognized in profit or loss as 'other expenses'	-	(331)
Receivables written off as uncollectible	(54)	(1,152)
Ending balance	<u>₩ 628</u>	<u>₩ 682</u>

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-month 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 limit 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 and 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 contracts with several financial institutions. The Group maintains business relationship with financial institutions with high credit ratings evaluated by independent credit rating agencies, and accordingly, credit risks associated with these financial institutions are limited.

(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. The Group's liquidity management policy involves projecting cash flows in major currencies and considering the level of liquid assets necessary to meet these, monitoring statement of financial position liquidity ratios against internal and external regulatory requirements and maintaining debt financing plans.

The table below analyzes the Group's financial liabilities into relevant maturity groupings based on the remaining period at the end of the reporting period to the contractual maturity date. Cash flows presented below are gross cash flows before discount and includes cash flows for interests.

September 30, 2023				
(In millions of Korean won)	Less than 1 year	Between 1–2 years	Between 2–5 years	More than 5 years
Non-derivative financial instruments				
Borrowings (excluding lease liabilities)	₩ 5,064,682	₩ 4,486,389	₩ 10,342,821	₩ 5,245,684
Lease liabilities	106,538	107,889	85,907	229,624
Trade and other payables ¹	9,496,681	94,440	13,139	933
	<u>14,667,901</u>	<u>4,688,718</u>	<u>10,441,867</u>	<u>5,476,241</u>
Derivative instruments				
Gross settlement currency forwards and swaps				
(Inflows)	(585,433)	(1,958,072)	(2,288,352)	(1,392,709)
Outflows	513,777	1,742,706	2,142,064	1,155,602
	<u>(71,656)</u>	<u>(215,366)</u>	<u>(146,288)</u>	<u>(237,107)</u>
	<u>₩ 14,596,245</u>	<u>₩ 4,473,352</u>	<u>₩ 10,295,579</u>	<u>₩ 5,239,134</u>

¹ Included ₩133,660 million of financial liabilities due to a financial institution relating to reverse factoring arrangement as at September 30, 2023. As at December 31, 2022, there is no utilized amount in the reverse factoring arrangement.

Although it is 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 (Note 18). Additionally, during the nine-month period ended September 30, 2023, the group issued exchangeable bonds that allow issuers and investors to exercise their early redemption rights (Note 14).

December 31, 2022				
(In millions of Korean won)	Less than 1 year	Between 1–2 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 ¹	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
	<u>(16,042)</u>	<u>(110,289)</u>	<u>(92,876)</u>	<u>(159,098)</u>
	<u>₩ 13,877,015</u>	<u>₩ 3,317,179</u>	<u>₩ 5,739,016</u>	<u>₩ 3,926,286</u>

As of September 30, 2023, and December 31, 2022, the Group has entered into swap contracts for which cash flow hedge accounting is applied, to avoid market price fluctuation of raw materials.

(In millions of Korean won)	Purpose of the contracts	Hedged items	Financial institution	Maturity	September 30, 2023		December 31, 2022	
					Assets	Liabilities	Assets	Liabilities
Merchandise (raw materials) swap ¹	Cash flow hedge	Non-ferrous metal	Citi Bank and others	2025. 12	₩ 45	₩ 4,886	₩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 at September 30, 2023, and December 31, 2022, are as follows:

(In millions of Korean won)	September 30, 2023			
	Less than 1 year	Between 1–2 years	Between 2–5 years	More than 5 years
Financial guarantee contracts (*)	₩ 478,076	₩ -	₩ -	₩ -

(In millions of Korean won)	December 31, 2022			
	Less than 1 year	Between 1–2 years	Between 2–5 years	More than 5 years
Financial guarantee contracts (*)	₩ 450,525	₩ -	₩ -	₩ -

(*) The financial guarantee contracts above are for joint ventures and are presented based on the maximum amount of guarantee that can be requested as at September 30, 2023 (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 statements of financial positions, plus net debt.

The gearing ratio and debt-to-equity ratio as of September 30, 2023, and December 31, 2022, were as follows:

<i>(In millions of Korean won, except for ratios)</i>	September 30, 2023		December 31, 2022	
Total borrowings (Note 14) (A)	₩	21,907,656	₩	15,964,519
Less: cash and cash equivalents (B)		(8,880,920)		(8,497,882)
Net debt (C=A+B)		13,026,736		7,466,637
Total liabilities (D)		36,134,815		30,492,696
Total equity (E)		41,365,206		37,481,127
Total capital (F=C+E)	₩	54,391,942	₩	44,947,764
Gearing ratio (C/F)		23.9%		16.6%
Debt-to-equity ratio (D/E)		87.4%		81.4%

3.3 Fair Value

- (1) Carrying amount and fair value of financial instruments by category as of September 30, 2023, and December 31, 2022, are as follows:

<i>(In millions of Korean won)</i>	September 30, 2023		December 31, 2022	
	Carrying amount	Fair value	Carrying amount	Fair value
Financial assets (current)				
Cash and cash equivalents	₩ 8,880,920	¹	₩ 8,497,882	¹
Deposits held by financial institutions	2,151	¹	14,448	¹
Trade receivables	8,923,809	¹	7,450,395	¹
Other receivables (excluding deposits held by financial institutions)	987,949	¹	727,983	¹
Current derivative financial assets (excluding currency forward)	40,661	40,661	9,167	9,167
Financial assets (non-current)				
Deposits held by financial institutions	₩ 272,375	¹	₩ 277,210	¹
Trade receivables	132,910	¹	120,698	¹
Other receivables (excluding deposits held by financial institutions)	659,070	¹	340,234	¹
Other non-current financial assets (carried at fair value)				
Marketable financial assets	552,899	552,899	462,330	462,330
Non-marketable financial assets ³	605,365	605,365	495,484	495,484
Non-current derivative financial assets (currency forward)	154,606	154,606	89,475	89,475
Non-current derivative financial assets (excluding currency forward)	258,127	258,127	138,764	138,764
Non-current derivative financial assets (acquisition of interests)	54,240	54,240	51,114	51,114
Financial liabilities (current)				
Trade and other payables	₩ 9,496,681	¹	₩ 9,655,799	¹

(In millions of Korean won)	September 30, 2023		December 31, 2022	
	Carrying amount	Fair value	Carrying amount	Fair value
Current borrowings (excluding lease liabilities)	4,492,411	¹	3,709,288	¹
Current lease liabilities	97,735	²	95,079	²
Current derivative financial liabilities (currency forward)	18,311	18,311	5,870	5,870
Current derivative financial liabilities (excluding currency forward)	3,960	3,960	1,401	1,401
Financial guarantee contracts liabilities	2,428	¹	-	-
Financial liabilities (non-current)				
Non-current borrowings (excluding lease liabilities/ exchangeable bond)	₩ 14,856,187	₩ 13,682,546	₩ 11,865,593	₩ 11,092,812
Non-current borrowings (exchangeable bond)	2,084,072	2,067,094	-	-
Non-current lease liabilities	377,251	²	294,559	²
Other non-current payables	108,512	¹	43,708	¹
Non-current derivative financial liabilities (currency forward)	-	-	4,364	4,364
Non-current derivative financial liabilities (excluding currency forward)	8,630	8,630	21,178	21,178
Non-current derivative financial liabilities (acquisition of interests)	9,068	9,068	7,777	7,777
Non-current derivative financial liabilities (right of exchange/option)	514,639	514,639	-	-

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 K-IFRS.

³ Acquisition costs of a part of these financial assets approximate their fair values.

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

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

Discount Rate	September 30, 2023	December 31, 2022	Remark
Non-current borrowings (excluding lease liabilities/ exchangeable bond)	4.10%–5.67%	4.94%–5.33%	Yield of Won debenture with credit rating (AA+)
Non-current borrowings(Exchangeable Bond)	5.67%/5.57%	-	Yield of foreign currency debenture equal to the maturity of the evaluation target

(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).

Fair value hierarchy of the financial instruments that are measured at fair value and their fair values disclosed as at September 30, 2023, and December 31, 2022, are as follows:

(In millions of Korean won)	September 30, 2023			
	Level 1	Level 2	Level 3	Total
Financial assets/liabilities measured at fair value				
Other non-current financial assets (marketable financial assets)	₩ 552,899	₩ -	₩ -	₩ 552,899
Other non-current financial assets (non-marketable financial assets) ¹	-	-	605,365	605,365
Current derivative financial assets (excluding currency forward)	-	40,661	-	40,661
Non-current derivative financial assets (currency forward)	-	154,606	-	154,606
Non-current derivative financial assets (excluding currency forward)	-	258,127	-	258,127
Non-current derivative financial assets (acquisition of interests)	-	-	54,240	54,240
Current derivative financial liabilities (currency forward)	-	18,311	-	18,311
Current derivative financial liabilities (excluding currency forward)	-	3,960	-	3,960
Non-current derivative financial liabilities (excluding currency forward)	-	8,630	-	8,630
Non-current derivative financial liabilities (acquisition of interests)	-	-	9,068	9,068
Non-current derivative financial liabilities (right of exchange/option)	-	-	514,639	514,639

(In millions of Korean won)	December 31, 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) ¹	-	-	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 (acquisition of interests)	-	-	7,777	7,777

¹ Acquisition costs of a part of these financial assets approximate their fair values. For fair values measured using other methods, see (3) valuation technique and the inputs.

(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 at September 30, 2023, and December 31, 2022, are as follows:

September 30, 2023						
<i>(In millions of Korean won)</i>	Fair value		Level	Valuation technique	Inputs	Coverage of Level 3 inputs (weighted average)
Non-current derivative financial assets (acquisition of interests)	₩	49,402	3	Monte Carlo Simulation	Stock volatility of underlying assets	40.54%
					Stock price correlation coefficient	35.81%
					Volatility of financial indicators	44.11%
		4,838	3	Binominal option-pricing model	Volatility	45.60%
Non-current derivative financial liabilities (acquisition of interests)		9,068	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)		14,512	3	Binominal option-pricing model	Volatility	25.92%
		193,888	3	Adjusted net asset method	-	-
Non-current borrowings (right of exchange/option)		514,639	3	Equity and bond cashflow weighted discount method	Stock price of underlying assets	549,000 won
					Risk-free rate	3.93%/4.00%
					Risk rate	5.67%/5.57%
					Volatility	33.99%

December 31, 2022

<i>(In millions of Korean won)</i>	Fair value	Level	Valuation Technique	Inputs	Coverage of Level 3 inputs (weighted average)
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	-	-

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

(In millions of Korean won)	September 30, 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	(79,123)	604,407	81,721	43,044
Gains (losses) recognized in profit for the year	37,128	(88,477)	10,310	-
Gains recognized in other comprehensive income	16,070	-	37,300	-
Ending balance	₩ 659,605	₩ 523,707	₩ 486,314	₩ 43,044

4. **CRITICAL ACCOUNTING ESTIMATES AND ASSUMPTIONS:**

The preparation of condensed consolidated interim financial statements requires the Group to make estimates and assumptions concerning the future. Management also needs to exercise judgement in applying the Group's accounting policies. Estimates and assumptions are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. The resulting accounting estimates may differ from the related actual results.

Significant accounting estimates and assumptions applied in the preparation of these condensed consolidated interim financial statements are the same as those applied to the consolidated financial statements as of and for the year ended December 31, 2022, except for the estimates used to determine income tax expense.

5. **FINANCIAL INSTRUMENTS BY CATEGORY:**

Categorizations of financial instruments as at September 30, 2023, and December 31, 2022, are as follows:

(In millions of Korean won)	September 30, 2023				
	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	Total
Financial assets					
Cash and cash equivalents	₩ 8,880,920	₩ -	₩ -	₩ -	₩ 8,880,920
Trade receivables	8,070,051	-	853,758	-	8,923,809
Non-current trade receivables	132,910	-	-	-	132,910
Other receivables	989,598	-	502	-	990,100
Other non-current receivables	931,445	-	-	-	931,445
Other current financial assets	-	-	-	40,661	40,661
Other non-current financial assets	-	383,886	774,378	466,973	1,625,237
Total	₩ 19,004,924	₩ 383,886	₩ 1,628,638	₩ 507,634	₩ 21,525,082

(In millions of Korean won)

September 30, 2023					
Financial liabilities	Financial liabilities at amortized cost		Other financial liabilities ²		Total
Trade payables	₩	5,011,679	₩	-	₩ 5,011,679
Other payables		4,485,002		-	4,485,002
Borrowings (current)		4,325,313		264,833	4,590,146
Other current financial liabilities		-		24,699	24,699
Other non-current financial liabilities		-		532,337	532,337
Other non-current payables		108,512		-	108,512
Borrowings (non-current)		16,940,259		377,251	17,317,510
Total	₩	30,870,765	₩	1,199,120	₩ 32,069,885

(In millions of Korean won)

December 31, 2022					
Financial assets	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	Total
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

(In millions of Korean won)

December 31, 2022					
Financial liabilities	Financial liabilities at amortized cost		Other financial liabilities ²		Total
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 nine-month periods ended September 30, 2023, and September 30, 2022, are as follows:

(In millions of Korean won)	2023		2022	
	Three months	Nine months	Three months	Nine months
Dividend income				
Financial assets at fair value through other comprehensive income	₩ 3,231	₩ 16,284	₩ 1,211	₩ 1,538
Financial assets at fair value through profit or loss	-	289	-	-
Impairment loss (reversal)				
Financial assets at amortized cost	₩ 18	₩ (542)	₩ (185)	₩ 104
Interest income				
Financial assets at amortized cost	₩ 94,953	₩ 229,138	₩ 71,927	₩ 190,136
Interest expense				
Financial liabilities at amortized cost	₩ (201,984)	₩ (483,394)	₩ (81,565)	₩ (206,488)
Other financial liabilities	(2,209)	(6,216)	(2,301)	(6,976)
Financial assets at amortized cost ¹	(5,761)	(29,160)	(2,810)	(5,396)
Gain on valuation/disposal				
Financial assets at fair value through profit or loss	₩ 30,329	₩ 34,051	₩ 9,990	₩ 10,334
Financial assets at fair value through other comprehensive income	(55,383)	(88,036)	(10,983)	(11,592)
Derivative instruments	157,920	300,538	351,151	485,401
Exchange differences				
Financial assets at amortized cost	₩ 231,754	₩ 581,935	₩ 990,818	₩ 1,646,352
Financial liabilities at amortized cost	(598,323)	(588,650)	(1,296,782)	(2,055,865)
Derivative instruments	-	(517)	7,512	18,051
Other financial liabilities	2,689	892	(18,641)	(29,830)

¹ Fees paid to financial institutions for factoring.

6. CASH AND CASH EQUIVALENTS:

Details of cash and cash equivalents as at September 30, 2023, and December 31, 2022, are as follows:

(In millions of Korean won)	September 30, 2023	December 31, 2022
Bank deposits and cash on hand	₩ 3,042,432	₩ 1,640,251
Deposits held by financial institutions and others	5,838,488	6,857,631
Total	<u>₩ 8,880,920</u>	<u>₩ 8,497,882</u>

As at September 30, 2023, cash and cash equivalents include ₩18,848 million (December 31, 2022: ₩11,364 million), which is subject to a restriction on the use in association with the national R&D projects.

7. TRADE AND OTHER RECEIVABLES:

Trade and other receivables and loss allowance, as at September 30, 2023, and December 31, 2022, are as follows:

<i>(In millions of Korean won)</i>	September 30, 2023		
	Gross amount	Loss allowance	Carrying amount
Trade receivables	₩ 8,926,758	₩ (2,949)	₩ 8,923,809
Non-current trade receivables	132,910	-	132,910
Other current receivables	990,728	(628)	990,100
Other non-current receivables	931,445	-	931,445
Total	<u>₩ 10,981,841</u>	<u>₩ (3,577)</u>	<u>₩ 10,978,264</u>

<i>(In millions of Korean won)</i>	December 31, 2022		
	Gross amount	Loss allowance	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	<u>₩ 8,936,667</u>	<u>₩ (5,699)</u>	<u>₩ 8,930,968</u>

Details of other receivables as at September 30, 2023, and December 31, 2022, are as follows:

<i>(In millions of Korean won)</i>	September 30, 2023	December 31, 2022
Current		
Non-trade receivables	₩ 651,912	₩ 487,646
Deposits held by financial institutions ¹	2,151	14,448
Accrued income	76,380	68,294
Loans	210,953	129,908
Guarantee deposits provided	48,704	42,135
	<u>990,100</u>	<u>742,431</u>
Non-current		
Non-trade receivables	₩ 541,326	₩ 30,793
Deposits held by financial institutions ¹	272,375	277,210
Loans	12,737	207,247
Guarantee deposits provided	105,007	102,194
	<u>931,445</u>	<u>617,444</u>
Total	<u>₩ 1,921,545</u>	<u>₩ 1,359,875</u>

¹ As at September 30, 2023, ₩266,100 million (December 31, 2022: ₩266,100 million) is withdrawal restriction in relation to large-, small- and medium-sized companies cooperation agreement, ₩115 million is restricted in use to be retained in connection with maintaining checking accounts (December 31, 2022: ₩123 million), and ₩5,000 million is restricted in use to be retained in connection with employee loan deposits (December 31, 2022: ₩10,000 million). Also, PLN 4 million is restricted in use to be retained in relation to overseas transportation of hazardous waste (December 31, 2022: PLN 3 million).

The aging analysis of trade and other receivables as at September 30, 2023, and December 31, 2022, is as follows:

	September 30, 2023		December 31, 2022	
	Trade receivables	Other receivables	Trade receivables	Other receivables
<i>(In millions of Korean won)</i>				
Receivables not past due	₩ 8,659,405	₩ 1,883,145	₩ 7,349,259	₩ 1,309,179
Past due, but not impaired				
Up to three months	366,665	26,431	220,785	31,873
Between 3–6 months	26,262	6,573	2,445	10,989
More than nine months	5,973	5,396	762	7,834
	398,900	38,400	223,992	50,696
Impaired receivables	1,363	628	2,859	682
Total	₩ 9,059,668	₩ 1,922,173	₩ 7,576,110	₩ 1,360,557

Movements of loss allowance on trade and other receivables for the nine-month period ended September 30, 2023, and for the year ended December 31, 2022, are as follows:

	September 30, 2023			
	Trade receivables		Other receivables	
	Current	Non-current	Current	Non-current
<i>(In millions of Korean won)</i>				
Beginning balance	₩ 5,017	-	₩ 682	-
Reversal of impairment	(542)	-	-	-
Write-off	(1,234)	-	(54)	-
Exchange differences	(292)	-	-	-
Ending balance	₩ 2,949	-	₩ 628	-

	December 31, 2022			
	Trade receivables		Other receivables	
	Current	Non-current	Current	Non-current
<i>(In millions of Korean won)</i>				
Beginning balance	₩ 5,094	-	₩ 2,165	-
Reversal of impairment	-	-	(331)	-
Business combination (Note 37)	724	-	-	-
Write-off	(849)	-	(1,152)	-
Exchange differences	48	-	-	-
Ending balance	₩ 5,017	-	₩ 682	-

As at September 30, 2023, and December 31, 2022, the carrying amounts of trade and other receivables are approximation of their fair values.

The Group transferred trade and other receivables to financial institutions for ₩17,445 million at September 30, 2023 (December 31, 2022: ₩201,640 million), and derecognized the trade and other receivables from the condensed consolidated interim financial statements at the date of disposal, as substantially all the risks and rewards were transferred.

8. OTHER FINANCIAL ASSETS AND LIABILITIES:

Details of other financial assets and liabilities as at September 30, 2023, and December 31, 2022, are as follows:

(In millions of Korean won)

	September 30, 2023	December 31, 2022
Other financial assets		
Financial assets at fair value through other comprehensive income (derivative instruments) (current)	₩ 41	₩ 9,167
Financial assets at fair value through profit or loss (derivative instruments) (current)	40,620	-
Financial assets at fair value through other comprehensive income (derivative instruments) (non-current)	4	4,764
Financial assets at fair value through other comprehensive income (excluding derivative instruments) (non-current)	774,378	712,355
Financial assets at fair value through profit or loss (derivative instruments) (non-current)	466,969	274,589
Financial assets at fair value through profit or loss (excluding derivative instruments) (non-current)	383,886	245,459
	<u>₩ 1,665,898</u>	<u>₩ 1,246,334</u>
Other financial liabilities		
Financial guarantee contracts	₩ 2,428	₩ -
Financial liabilities at fair value through other comprehensive income (derivative instruments) (current)	3,960	1,401
Financial liabilities at fair value through profit or loss (derivative instruments) (current)	18,311	5,870
Financial liabilities at fair value through other comprehensive income (derivative instruments) (non-current)	926	742
Financial liabilities at fair value through profit or loss (derivative instruments) (non-current)	531,411	32,577
	<u>₩ 557,036</u>	<u>₩ 40,590</u>

Changes in equity and debt instruments included in other financial assets as at September 30, 2023, and December 31, 2022, are as follows:

<i>(In millions of Korean won)</i>	September 30, 2023		December 31, 2022	
Beginning balance	₩	958,060	₩	362,452
Acquisitions/transfer		253,144		680,284
Disposals		(4,672)		(32,578)
Gain on valuation through other comprehensive income (before income tax effects)		(88,036)		(51,355)
Gain (loss) on valuation through profit or loss		33,084		(4,761)
Exchange differences on translation of foreign operations		6,684		4,018
Ending balance	₩	<u>1,158,264</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 nine-month period ended September 30, 2023, and for the year ended December 31, 2022, the Group did not recognize impairment for other financial assets.

9. INVENTORIES:

Details of inventories as at September 30, 2023, and December 31, 2022, are as follows:

<i>(In millions of Korean won)</i>	September 30, 2023		
	Gross amount	Valuation allowance	Carrying amount
Merchandise	₩ 460,616	₩ (31,779)	₩ 428,837
Finished/semifinished products	5,771,065	(188,783)	5,582,282
Work in process	20,427	-	20,427
Raw materials	2,946,235	(71,900)	2,874,335
Supplies	343,152	-	343,152
Goods in transit	1,358,730	-	1,358,730
Total	₩ 10,900,225	₩ (292,462)	₩ 10,607,763

<i>(In millions of Korean won)</i>	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
Goods in transit	1,377,791	-	1,377,791
Total	₩ 12,287,860	₩ (407,229)	₩ 11,880,631

The cost of inventories recognized as sales costs during the nine-month period ended September 30, 2023, was ₩26,974,239 million (2022: ₩22,538,654 million).

10. INVESTMENTS IN ASSOCIATES AND JOINT VENTURES:

Changes in investments in associates and joint ventures for the nine-month period ended September 30, 2023, and for the year ended December 31, 2022, are as follows:

	September 30, 2023															
					Share of other comprehensiv e income (loss) of associates and joint ventures		Share of profit (loss) of associates and joint ventures		Impairment/d isposals		Others		Ending balance			
(In millions of Korean won)	Beginning balance		Acquisitions /Transfer		Dividends											
TECHWIN Co., Ltd.	₩	16,526	₩	-	₩	-	₩	(1,581)	₩	-	₩	-	₩	-	₩	14,945
SEETEC Co., Ltd		134,482		-		(5,000)		7,267		-		-		461		137,210
LG Life Sciences Poland Ltd.		17		-		-		-		-		-		-		17
HUAJIN NEW ENERGY MATERIALS (QUZHOU) CO., LTD.		81,179		-		-		(1,324)		1,282		-		-		81,137
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		-		-		(22,085)		13,304		-		-		179,164
NEXPO Co., Ltd		-		46,575		-		62		-		-		-		46,637
TL Chemical CO., Ltd		-		2,375		-		(138)		-		-		-		2,237
LG Toray Hungary Battery Separator Kft.		47,816		-		-		1,079		-		-		-		48,895
KOREA PRECURSOR CO., LTD.		445,999		-		-		(5,640)		19,505		-		(8,400)		451,464
		19,838		20,384		-		(1,531)		(75)		-		-		38,616
	₩	949,553	₩	69,334	₩	(5,000)	₩	(25,690)	₩	34,624	₩	(14,560)	₩	(7,939)	₩	1,000,322

¹ During the nine-month period ended September 30, 2023, the Group disposed 100% ownership shares of VINFAST LITHIUM BATTERY PACK LLC.

² The Group decided on the non-reciprocal transfer of Jiangxi VL Battery Co., Ltd. and recognized impairment losses on the carrying amount.

	December 31, 2022													
	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		Others		Ending balance	
(In millions of Korean won)														
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) CO., 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
	₩	535,310	₩	466,012	₩	(5,000)	₩	(46,215)	₩	17,304	₩	(17,858)	₩	949,553

¹ During the previous year, the Group reclassified the shares of VINA Plasticizers Chemical Co., Ltd. amounting to ₩16,822 million as assets held for sale.

Summarized financial information of associates and joint ventures as of September 30, 2023, and December 31, 2022, is disclosed in Note 1.3 and Note 1.4.

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:

September 30, 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.	₩ 164,055	49	₩ 80,387	₩ -	₩ 750	₩	81,137
SEETEC Co., Ltd.	281,360	50	140,680	(3,470)	-		137,210
LG Toray Hungary Battery Separator Kft.	777,038	50	388,520	71,344	(8,400)		451,464
PT.HLI Green Power	457,060	50	228,530	-	(49,366)		179,164
December 31, 2022							
<i>(In millions of Korean won)</i>	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

11. PROPERTY, PLANT AND EQUIPMENT:

Changes in property, plant and equipment for the nine-month period ended September 30, 2023, and for the year ended December 31, 2022, are as follows:

<i>(In millions of Korean won)</i>	September 30, 2023		December 31, 2022	
Beginning balance	₩	29,662,743	₩	24,378,259
Business combination (Note 37)		935		7,251
Acquisitions/transfer		12,553,712		15,410,699
Disposals/transfer		(3,857,670)		(6,837,397)
Exchange differences		728,354		(138,953)
Depreciation		(2,597,462)		(3,103,130)
Impairment		(21,373)		(38,095)
Transfer to assets held for sale (Note 34)		(106,473)		(15,891)
Ending balance	₩	36,362,766	₩	29,662,743

During the nine-month period ended September 30, 2023, the Group capitalized ₩ 57,049 million of borrowing costs (2022: ₩14,189 million) in relation to the acquisition of property, plant and equipment. The capitalization rate of borrowings used to determine the amount of borrowing costs eligible for capitalization is 3.36% (2022: 1.60%).

Line items, including depreciation in the consolidated statements of profit or loss for the nine-month periods ended September 30, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	2023		2022	
	Three months	Nine months	Three months	Nine months
Cost of sales	₩ 797,255	₩ 2,312,251	₩ 719,469	₩ 2,038,852
Selling and administrative expenses	91,261	260,731	73,078	210,407
Others	-	81	368	561
Discontinued operations	6,623	24,399	9,066	25,225
Total	₩ 895,139	₩ 2,597,462	₩ 801,981	₩ 2,275,045

Lease

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

Details of right-of-use assets in the consolidated statement of financial position are as follows:

<i>(In millions of Korean won)</i>	September 30, 2023		December 31, 2022	
Right-of-use assets¹				
Real estate	₩	455,688	₩	382,714
Machinery		45,788		50,078
Vehicles		34,512		29,935
Tools		2,184		2,204
Equipment		1,056		568
	₩	<u>539,228</u>	₩	<u>465,499</u>

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

Additions to the right-of-use assets during the nine-month period ended September 30, 2023, were ₩212,856 million (2022: ₩145,668 million).

<i>(In millions of Korean won)</i>	September 30, 2023		December 31, 2022	
Lease liabilities¹				
Current	₩	97,735	₩	95,079
Non-current		377,251		294,559
	₩	<u>474,986</u>	₩	<u>389,638</u>

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

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

Lease-related expenses recognized in the consolidated statements of profit or loss for the nine-month periods ended September 30, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	2023		2022	
Depreciation of right-of-use assets				
Real estate	₩	65,189	₩	53,206
Machinery		6,928		4,725
Vehicles		15,660		12,829
Tools		1,596		1,465
Equipment		260		261
	₩	<u>89,633</u>	₩	<u>72,486</u>
Interest expense relating to lease liabilities (included in finance cost)	₩	6,216	₩	6,976
Expenses relating to short-term leases (included in cost of goods sold and administrative expenses)		26,917		24,275
Expenses relating to leases of low-value assets that are not short- term leases (included in cost of goods sold and administrative expenses)		14,525		11,080

Total cash outflow for leases during the nine-month period ended September 30, 2023, was ₩138,152 million (2022: ₩112,306 million).

12. INTANGIBLE ASSETS:

Changes in intangible assets for the nine-month period ended September 30, 2023, and for the year ended December 31, 2022, are as follows:

<i>(In millions of Korean won)</i>	September 30, 2023		December 31, 2022	
Beginning balance	₩	2,690,203	₩	2,444,303
Business combination (Note 37)		841,304		1,504
Acquisitions/transfer		391,521		598,608
Disposals/transfer		(37,183)		(41,494)
Exchange differences		99,090		4,205
Amortization		(295,702)		(290,921)
Impairment		(20)		(25,998)
Transfer to assets held for sale (Note 34)		(35,721)		(4)
Ending balance	₩	<u>3,653,492</u>	₩	<u>2,690,203</u>

Line items, including amortization of intangible assets for the nine-month periods ended September 30, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	2023				2022			
	Three months		Nine months		Three months		Nine months	
Cost of sales	₩	16,166	₩	46,495	₩	13,390	₩	41,582
Selling and administrative expenses		83,821		238,652		56,476		158,690
Discontinued operations		3,514		10,555		4,058		12,172
Total	₩	<u>103,501</u>	₩	<u>295,702</u>	₩	<u>73,924</u>	₩	<u>212,444</u>

Total research and development costs recognized as expenses amounted to ₩1,467,953 million (2022: ₩1,261,592 million) for the nine-month periods ended September 30, 2023 and 2022.

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 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	10,459	9,417	9,329	9,329	48,370

Changes in greenhouse gas emission permits during the nine-month period ended September 30, 2023, and for the year ended December 31, 2022, are as follows:

<i>(In thousands of tons and millions of Korean won)</i>	September 30, 2023							
	2020		2021		2022		2023	
	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Beginning balance								
/allocation with nil								
consideration	8,376	₩ -	9,836	₩ -	10,459	₩ -	9,417	₩ -
(Sales) purchase	(69)	1,111	(216)	(20)	(731)	179	-	-
Exchange	100	-	(100)	-	-	-	-	-
Borrowings/Carry								
forwards between								
years	(49)	(388)	(379)	388	(781)		1,209	-
Surrendered to the								
government	(8,358)	(723)	(9,141)	(368)	(8,947)	(179)	-	-
Ending balance ¹	-	₩ -	-	₩ -	-	₩ -	10,626	₩ -

<i>(In thousands of tons and millions of Korean won)</i>	September 30, 2023					
	2024		2025		Total	
	Quantity	Amount	Quantity	Amount	Quantity	Amount
Beginning balance						
/allocation with nil						
consideration	9,329	₩ -	9,329	₩ -	56,746	₩ -
Purchase (sale)	-	-	-	-	(1,016)	1,270
Exchange	-	-	-	-	-	-
Borrowings/carry						
forwards between						
years	-	-	-	-	-	-
Surrendered to the						
government	-	-	-	-	(26,446)	(1,270)
Ending balance ¹	9,329	₩ -	9,329	₩ -	29,284	₩ -

¹ The emission permits for 2022 are expected to be surrendered to the government after getting a certification in the current year.

(In thousands of tons and millions of Korean won)	December 31, 2022							
	2020		2021		2022		2023	
	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Beginning balance /allocation with nil consideration	8,666	₩ -	10,113	₩ -	9,417	₩ -	9,417	₩ -
(Sales) purchase	(69)	1,111	(285)	(20)	(249)	-	-	-
Exchange	100	-	(100)	-	-	-	-	-
Issuance of offset credits	-	-	-	-	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	₩ -

(In thousands of tons and millions of Korean won)	December 31, 2022					
	2024		2025		Total	
	Quantity	Amount	Quantity	Amount	Quantity	Amount
Beginning balance /allocation with nil consideration	9,329	₩ -	9,329	₩ -	56,271	₩ -
Purchase (sales)	-	-	-	-	(603)	1,091
Exchange	-	-	-	-	-	-
Issuance of offset credits	-	-	-	-	119	-
Borrowings/Carry forwards between years	-	-	-	-	-	-
Surrendered to the government	-	-	-	-	(17,984)	(1,091)
Ending balance	9,329	₩ -	9,329	₩ -	37,803	₩ -

During the nine-month period ended September 30, 2023, and for the year ended December 31, 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 condensed consolidated interim financial statements regarding the EU ETS (Emissions Trading System) are as follows:

(In thousands of tons and millions of Korean won)	September 30, 2023		December 31, 2022	
	Quantity	Amount	Quantity	Amount
Beginning balance	87	₩ 8,002	-	₩ -
Increase	141	13,055	121	11,794
used	(104)	(11,068)	(34)	(3,792)
Ending balance¹	124	₩ 9,989	87	₩ 8,002

13. OTHER CURRENT AND NON-CURRENT ASSETS:

Details of other current and non-current assets as at September 30, 2023, and December 31, 2022, are as follows:

<i>(In millions of Korean won)</i>	September 30, 2023	December 31, 2022
Current		
Prepayments to suppliers and prepaid expenses	₩ 358,297	₩ 455,013
Prepaid value-added tax	320,900	293,627
Others	268,118	264,823
Total	<u>₩ 947,315</u>	<u>₩ 1,013,463</u>
Non-current		
Net defined benefit assets	₩ 507,971	₩ 618,049
Long-term prepayments and long-term prepaid expenses	202,808	143,876
Others	145	138
Total	<u>₩ 710,924</u>	<u>₩ 762,063</u>

14. BORROWINGS:

Borrowings as at September 30, 2023, and December 31, 2022, consist of the following:

<i>(In millions of Korean won)</i>	September 30, 2023	December 31, 2022
Current		
Short-term borrowings	₩ 2,054,056	₩ 1,402,367
Current portion of long-term borrowings	1,448,733	921,928
Current portion of debentures	989,622	1,384,993
Current lease liabilities	97,735	95,079
	<u>4,590,146</u>	<u>3,804,367</u>
Non-current		
Long-term borrowings	5,904,588	5,285,629
Debentures	11,035,671	6,579,964
Lease liabilities	377,251	294,559
	<u>17,317,510</u>	<u>12,160,152</u>
Total	<u>₩ 21,907,656</u>	<u>₩ 15,964,519</u>

Details of short- and long-term borrowings and debentures as at September 30, 2023, and December 31, 2022, are as follows:

(In millions of Korean won)	Currency	Bank	Latest maturity date	Interest rate(%) as at September 30, 2023	September 30, 2023		December 31, 2022	
					Current	Non-current	Current	Non-current
Short-term borrowings								
Bank loans	Foreign currency	CITI Securities and others	2024.06.20	6.62 and others	₩ 1,976,700	₩ -	₩ 1,402,367	₩ -
Negotiated borrowings in foreign currency	Foreign currency	Woori Bank and others	2023.12.17	6M EURIBOR+0.40 and others	77,356	-	-	-
Total					₩ 2,054,056	₩ -	₩ 1,402,367	₩ -
Long-term borrowings								
Bank loans	Korean won	KDB Bank and others	2028.11.1	3.05 and others	₩ 50,000	₩ 605,000	₩ -	₩ 500,000
	Foreign currency	RHB and others	2031.12.15	3M EURIBOR + 0.89 and others	1,398,891	5,300,009	921,928	4,786,280
Less: discount on long-term borrowings					(158)	(421)	-	(651)
Total					₩ 1,448,733	₩ 5,904,588	₩ 921,928	₩ 5,285,629
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	-	4,437,840	675,600	2,914,790
Exchangeable bonds	Foreign currency	CITI Securities and others	2030.07.18	1.60 and others	-	2,689,600	-	-
Less: discount on debentures					(378)	(641,769)	(607)	(24,826)
Total					₩ 989,622	₩ 11,035,671	₩ 1,384,993	₩ 6,579,964

1) The details of newly issued exchangeable bonds (Tranche 1) during the nine-month period ended September 30, 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.
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)

2) The details of newly issued exchangeable bonds (Tranche 2) during the nine-month period ended September 30, 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.
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 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 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)

3) Details of the exchangeable bonds (Tranche 1) as of the date of issuance and as of September 30, 2023, are as follows.

<i>(In millions of Korean won)</i>	July 18, 2023	September 30, 2023
Issue price	₩ 1,266,100	₩ 1,344,800
Book amount of exchangeable bonds	991,756	1,081,284
Derivative financial liabilities	<u>263,532</u>	<u>231,305</u>

4) Details of the exchangeable bonds (Tranche 2) as of the date of issuance and as of September 30, 2023, are as follows.

<i>(In millions of Korean won)</i>	July 18, 2023	September 30, 2023
Issue price	₩ 1,266,100	₩ 1,344,800
Book amount of exchangeable bonds	914,412	1,002,788
Derivative financial liabilities	<u>340,876</u>	<u>283,335</u>

5) Details of lease liabilities as at September 30, 2023, and December 31, 2022, are as follows:

<i>(In millions of Korean won)</i>		September 30, 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	₩ 474,986	₩ 97,735	₩ 377,251
<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

15. PROVISIONS:

Changes in provisions for the nine-month period ended September 30, 2023, and for the year ended December 31, 2022, are as follows:

(In millions of Korean won)	September 30, 2023			
	Warranty ¹	Greenhouse gas emission ²	Others ³	Total
Beginning balance	₩ 1,485,978	₩ 8,712	₩ 65,170	₩ 1,559,860
Additions	632,304	9,773	104,637	746,714
Used	(778,844)	(11,248)	(38,744)	(828,836)
Ending balance	₩ 1,339,438	₩ 7,237	₩ 131,063	₩ 1,477,738
Current portion	470,523	7,237	109,888	587,648
Non-current portion	868,915	-	21,175	890,090

(In millions of Korean won)	December 31, 2022			
	Warranty ¹	Greenhouse gas emission ²	Others ³	Total
Beginning balance	₩ 2,110,180	₩ 79	₩ 99,449	₩ 2,209,708
Business combination (Note 37)	4,999	-	-	4,999
Additions (reversal)	666,923	12,493	9,136	688,552
Used	(1,296,124)	(3,860)	(43,415)	(1,343,399)
Ending balance	₩ 1,485,978	₩ 8,712	₩ 65,170	₩ 1,559,860
Current portion	971,836	8,712	45,898	1,026,446
Non-current portion	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 at September 30, 2023, the above warranty provision included ₩1,337,420 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 at September 30, 2023, amounts to 6,461 thousand tons (September 30, 2022: 7,300 thousand tons).

³ In addition to obligations related to sales warranties, etc., the consolidated company estimates the costs required to restore the leased office and the costs expected to be incurred in business activities and sets them as provisions.

16. NET DEFINED BENEFIT ASSETS:

Details of net defined benefit liabilities (assets) recognized in the consolidated statements of financial position as at September 30, 2023, and December 31, 2022, are as follows:

<i>(In millions of Korean won)</i>	September 30, 2023		December 31, 2022	
Present value of defined benefit obligations ¹	₩	1,641,226	₩	1,554,870
Fair value of plan assets		(2,127,952)		(2,153,449)
Liabilities (Assets) in the consolidated statements of financial position	₩	(486,726)	₩	(598,579)

¹ The present value of retirement benefit obligations is net of existing contributions to the National Pension Plan of ₩592 million as at September 30, 2023 (December 31, 2022: ₩655 million).

The amounts recognized in the consolidated statements of profit or loss for the three-month and nine-month periods ended September 30, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	2023				2022			
	Three months		Nine months		Three months		Nine months	
Current service cost ¹	₩	48,612	₩	147,752	₩	52,746	₩	158,352
Interest cost		(8,018)		(24,001)		(202)		(569)
Total, included in employee benefit expenses	₩	40,594	₩	123,751	₩	52,544	₩	157,783

¹ The above amounts excluded ₩906 million (2022: ₩921 million) of expenses capitalized to construction in progress and development costs.

Postemployment benefits recognized for the defined contribution plan for the nine-month period ended September 30, 2023, amounted to ₩10,651 million (2022: ₩8,125 million).

Postemployment benefits recognized in the consolidated statements of profit or loss for the three-month and nine-month periods ended September 30, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	2023				2022			
	Three months		Nine months		Three months		Nine months	
Cost of sales	₩	15,631	₩	65,984	₩	29,775	₩	90,825
Selling and administrative expenses		25,757		62,007		22,159		66,995
Discontinued operations		2,264		6,411		2,709		8,088
Total	₩	43,652	₩	134,402	₩	54,643	₩	165,908

Movements in the present value of defined benefit obligations for the nine-month period ended September 30, 2023, and for the year ended December 31, 2022, are as follows:

<i>(In millions of Korean won)</i>	September 30, 2023		December 31, 2022	
Beginning balance	₩	1,554,870	₩	1,616,781
Transfer in		10,498		11,434
Transfer out		(3,592)		(6,334)
Increase in defined benefit obligations due to sales and merger		(2,701)		-
Current service cost		148,658		211,737
Interest expense		60,397		46,328
Remeasurements:				
Actuarial loss from change in demographic assumptions		-		(1,210)
Actuarial gain from change in financial assumptions		-		(284,041)
Actuarial loss from experience adjustments		-		78,279
Others		-		459
Exchange differences		(4,783)		(1,108)
Payments from plans		(122,121)		(117,455)
Ending balance	₩	<u>1,641,226</u>	₩	<u>1,554,870</u>

Movements in the fair value of plan assets for the nine-month period ended September 30, 2023, and for the year ended December 31, 2022, are as follows:

<i>(In millions of Korean won)</i>	September 30, 2023		December 31, 2022	
Beginning balance	₩	2,153,449	₩	1,643,709
Increase in plan assets due to business combination		(1,138)		(933)
Increase in plan assets due to sales and merger		(3,825)		-
Interest income		84,398		47,107
Remeasurements:				
Return on plan assets (excluding amounts included in interest income)		5,323		(13,380)
Contributions:				
Employers		1,251		586,745
Payments from plans		(108,831)		(107,204)
Administrative costs		(2,675)		(2,595)
Ending balance	₩	<u>2,127,952</u>	₩	<u>2,153,449</u>

The actual return on plan assets for the nine-month period ended September 30, 2023, was ₩89,721 million, and for the year ended December 31, 2022, was ₩33,727 million.

The significant actuarial assumptions as at September 30, 2023, and December 31, 2022, are as follows:

	September 30, 2023	December 31, 2022
Discount rate	5.3%–5.6%	5.3%–5.6%
Future salary growth rate	6.0%	6.0%

The sensitivity analysis for changes in key actuarial assumptions as at September 30, 2023, is as follows:

<i>(In millions of Korean won)</i>		Increase by 0.5%		Decrease by 0.5%
Discount rate:				
(Decrease) increase in defined benefit obligations	₩	(159,708)	₩	195,954
Salary growth rate:				
Increase (decrease) in defined benefit obligations	₩	204,714	₩	(168,973)

A decrease in corporate bond yields is a major factor contributing to an increase in defined benefit liabilities.

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 on the statement 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 at September 30, 2023, and December 31, 2022, consist of the following:

	September 30, 2023		December 31, 2022	
<i>(In millions of Korean won)</i>	Amount	Composition (%)	Amount	Composition (%)
Insurance contracts with guaranteed yield	₩ 2,117,130	99.5	₩ 2,142,224	99.5
Equity-linked bonds	10,820	0.5	11,222	0.5
Time deposits	2	0.0	3	0.0
	₩ 2,127,952	100.0	₩ 2,153,449	100.0

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

17. OTHER CURRENT AND NON-CURRENT LIABILITIES:

Details of other current and non-current liabilities as at September 30, 2023, and December 31, 2022, are as follows:

<i>(In millions of Korean won)</i>	September 30, 2023		December 31, 2022	
Current				
Advances from customers	₩	199,472	₩	232,059
Withholdings		293,032		147,334
Unearned revenues		157,951		149,293
Accrued expenses		528,385		810,768
Total	₩	<u>1,178,840</u>	₩	<u>1,339,454</u>
Non-current				
Long-term accrued expenses	₩	71,145	₩	65,182
Long-term unearned revenues		96,730		224,619
Long-term advanced received		222,534		114,544
Total	₩	<u>390,409</u>	₩	<u>404,345</u>

18. COMMITMENTS AND CONTINGENCIES:

- (1) As at September 30, 2023, the Parent Company and certain subsidiaries have been guaranteed by Seoul Guarantee Insurance Company for the execution of contracts and others.
- (2) As at September 30, 2023, the Parent Company and certain subsidiaries have various specific lines 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	218	-	-	10	-	-
Limit of the letter of credit	15,000	278	-	293	2,009	-	-	2,970	-	-	2,000
Limit of discount of notes from export	-	1,269	-	1,070	3,200	-	-	-	-	-	-
Limit of guaranteed payments in other foreign currency	-	181	51,600	245	200	-	-	-	-	-	-
Limit of loan arrangements	350,000	-	720,000	6,540	12,565	2,818	155	40	-	450	-
Derivatives	-	-	90,000	1,435	-	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.

- (3) As at September 30, 2023, the Parent Company and certain subsidiaries have B2B purchase arrangements with several financial institutions with a limit of ₩356,000 million and ₩190,000 million, respectively.

- (4) As at September 30, 2023, the Parent Company has reverse factoring agreements. Of the limits granted by credit card companies, ₩133,660 million for the Shinhan Card is used.
- (5) As at September 30, 2023, the Group's litigation status is as follows.
- i) As at September 30, 2023, in connection with the styrene monomer gas leakage accident, several lawsuits against LG Polymer India Pvt. Ltd., a subsidiary, have been filed with the 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 at September 30, 2023, in relation to small rechargeable batteries and General Motors (“GM”) Bolt EV, the consumers have filed five class actions against a subsidiary. However, the ultimate outcome of these cases cannot be determined at the reporting date.
 - iii) In addition, as at September 30, 2023, the Parent Company and certain subsidiaries have been named as plaintiffs in eight (related claim amount of ₩26,494 million) and 23 (related claim amount of USD 90 million and ₩ 5,921 million) legal actions, respectively. They have been named as defendants in 15 and 84 legal actions, with ₩85,539 million and ₩3,499 million in claims, respectively. The ultimate outcome of these cases cannot be determined at the reporting date.
- (6) The Group has entered into manufacture and production technical contracts with ExxonMobil and others.
- (7) The Group 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 at September 30, 2023, the Group has entered into a payment guarantee contract of USD 8 million, and certain subsidiaries have entered into payment guarantee contracts of USD 126 million, EUR 1 million and ₩7,755 million with financial institutions to guarantee the warrant of products and payment. Certain subsidiaries have entered into payment guarantee contracts of CNY 494 million with financial institutions in relation to the custom of imported raw materials.
- (9) Capital expenditure arrangement that has not been incurred at the end of the reporting period is as follows:

<i>(In millions of Korean won)</i>	September 30, 2023		December 31, 2022	
Property, plant and equipment	₩	7,192,692	₩	6,522,401

- (10) As at September 30, 2023, the Group has entered into an agreement with GM regarding joint investment in 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.

- (11) As at September 30, 2023, the Group has entered into a joint venture agreement with Honda in which the Group agreed to invest USD 1,802 million. In addition, during the year ended December 31, 2022, the Group determined payment guarantees of USD 450 million for the joint venture, in accordance with the equity ratio of the borrowing with a credit limit of USD 883 million.
- (12) As at September 30, 2023, the Group has entered into a joint venture agreement with Stellantis in which the Group agreed to invest USD 1,464 million.
- (13) As at September 30, 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.
- (14) As at September 30, 2023, the Group and certain subsidiaries' investment agreements are as follows:

<i>(In millions of Korean won, USD and EUR)</i>	Currency	Committed investments	Cumulative investments	Remaining
KBE Fund	KRW	150,000	75,213	74,787
Gross Acceleration Fund	KRW	5,000	4,900	100
BNZ (Beyond Net Zero) Fund	USD	150	48	102
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 LLC.

- (15) During the year ended December 31, 2022, the Group 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. The shares were recognized as an investment in associates as it was determined that there was joint control under the agreement. The details of 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	<ul style="list-style-type: none"> - During the lock-up period¹, 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 shareholders and subsidiaries have the right to request the defaulting shareholders to sell their shares (Call Option) and the defaulting shareholders 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	<p>In the event of a deadlock agreed upon by both parties,</p> <ol style="list-style-type: none"> 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 for borrowings as at September 30, 2023, and December 31, 2022. The details are as follows:

(In millions of Korean won)

Guarantor	Guaranteed company	Creditor	Amount of borrowing ¹		Guaranteed amount ²	
			September 30, 2023	December 31, 2022	September 30, 2023	December 31, 2022
LG ENERGY SOLUTION, LTD.	PT. HLI Green Power	ANZ and others	₩ 258,874	₩ 88,711	₩ 478,076	₩ 450,525

¹ It is the amount of borrowing as at September 30, 2023

² It is a total amount guaranteed

- (17) During the nine-month period ended September 30, 2023, the Parent Company 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.

19. SHARE CAPITAL:

Changes in share capital and share premium for the nine-month period ended September 30, 2023, and for the year ended December 31, 2022, are as follows:

<i>(In millions of Korean won and in shares)</i>	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
September 30, 2023	70,592,343	₩ 352,962	7,688,800	₩ 38,444	₩ 2,014,036

Changes in treasury shares for the nine-month period ended September 30, 2023, and for the year ended December 31, 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	(367,529)	-	(17,741)	192,119
December 31, 2022	-	6,041	₩ 270	₩ 655,926
September 30, 2023	-	6,041	₩ 270	₩ 655,926

¹ The Group disposed of all of treasury shares of the Parent Company (367,529 shares) on November 24, 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 at September 30, 2023, and December 31, 2022, consist of:

<i>(In millions of Korean won)</i>	September 30, 2023	December 31, 2022
Revaluation reserve	₩ 206,769	₩ 206,769
Share premium	2,014,036	2,014,036
Gain on disposal of treasury shares	655,926	655,926
Other capital surplus	8,695,367	8,692,825
Total	₩ 11,572,098	₩ 11,569,556

20. RETAINED EARNINGS:

Retained earnings as at September 30, 2023, and December 31, 2022, consist of:

<i>(In millions of Korean won)</i>	September 30, 2023	December 31, 2022
Legal reserve ¹	₩ 674,681	₩ 674,327
Discretionary reserve ²	16,894,707	14,570,240
Retained earnings before appropriation	2,213,232	3,897,696
Total	<u>₩ 19,782,620</u>	<u>₩ 19,142,263</u>

¹ The Commercial Code of the Republic of Korea requires the Group to appropriate, for each financial period, as a legal reserve, an amount equal to a minimum of 10% of cash dividend paid until such reserve equals 50% of its issued share capital. The reserve is not available for cash dividend payment but may be transferred to share capital or used to reduce accumulated deficits. 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 Group separately accumulates a discretionary reserve for research and human resource development through the appropriation of retained earnings, which has been included as a 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 reserves and will be used for dividends.

21. OTHER COMPONENTS OF EQUITY:

Details of other components of equity as at September 30, 2023, and December 31, 2022, are as follows:

<i>(In millions of Korean won)</i>	September 30, 2023	December 31, 2022
Treasury shares (Note 19)	₩ (270)	₩ (270)
Capital transactions within the Group ¹	(19,299)	(19,299)
Total	<u>₩ (19,569)</u>	<u>₩ (19,569)</u>

¹ Includes gain or loss on disposal of investments and investment differences due to changes in equity, net of deferred tax.

22. OPERATING PROFIT:

Selling and administrative expenses for the nine-month periods ended September 30, 2023 and 2022, are as follows:

(In millions of Korean won)		2023		2022		
		Three month	Nine month	Three month	Nine month	
Revenue	₩	13,494,826	42,114,983	₩	13,984,622	37,327,081
Cost of sales		11,177,109	35,079,485		11,235,377	29,650,108
Gross profit		2,317,717	7,035,498		2,749,245	7,676,973
Other non-operating income (*)		215,587	426,797		-	-
Selling and administrative expenses		1,672,878	5,180,526		1,837,864	4,906,991
Wages and salaries		439,280	1,269,509		460,125	1,149,790
Postemployment benefits (Note 16)		25,757	62,007		22,160	66,995
Employee benefits		83,697	292,292		72,088	211,684
Travel expense		29,992	81,502		23,474	58,412
Water and utilities		32,322	92,717		26,076	68,624
Packaging expense		2,633	6,225		4,836	8,395
Rental expenses		38,065	118,152		40,813	110,016
Commission expenses		299,258	832,428		277,664	718,418
Depreciation		92,108	263,319		73,430	211,480
Advertising expense		17,022	50,433		12,105	32,241
Freight expenses		179,906	592,678		407,124	1,282,136
Training expense		16,118	46,337		14,073	32,993
Amortization (Note 12)		83,821	238,652		56,475	158,690
Sample expense		7,034	23,955		6,195	18,141
Development costs		112,575	328,052		90,541	253,628
Others		213,290	882,268		250,685	525,348
Operating profit	₩	860,426	2,281,769	₩	911,381	2,769,982

(*) 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 expected to be received by the Group based on the anticipated revenue during the nine-month period ended September 30, 2023.

23. CLASSIFICATION OF EXPENSES BY NATURE:

Cost of sales and selling and administrative expenses by nature for the nine-month periods ended September 30, 2023 and 2022, consist of:

<i>(In millions of Korean won)</i>	2023		2022	
	Three months	Nine months	Three months	Nine months
Changes in inventories of merchandise, finished goods, semifinished goods and work in process	₩ 370,501	₩ 1,204,030	₩ (886,305)	₩ (2,936,580)
Raw materials and consumables used	7,534,220	24,603,793	9,107,966	24,236,165
Purchase of merchandise	429,908	1,166,416	598,153	1,239,069
Employee benefit expenses (Note 24)	1,203,668	3,649,666	1,270,473	3,360,741
Advertising expenses	17,318	51,299	12,360	33,096
Freight expenses	193,562	635,024	422,364	1,324,120
Commission expenses	494,522	1,383,118	460,294	1,221,035
Depreciation and amortization	989,350	2,860,717	862,763	2,450,603
Rent expenses and usage fee	30,842	86,924	27,371	76,960
Other expenses	1,586,096	4,619,024	1,197,802	3,551,890
Total	₩ 12,849,987	₩ 40,260,011	₩ 13,073,241	₩ 34,557,099

24. EMPLOYEE BENEFIT EXPENSES:

Details of employee benefit expenses for the three-month and nine-month periods ended September 30, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	2023		2022	
	Three months	Nine months	Three months	Nine months
Salaries	₩ 987,725	₩ 2,998,477	₩ 1,084,415	₩ 2,815,409
Postemployment benefits – Defined benefit plan (Note 16)	38,427	117,687	49,914	149,995
Postemployment benefits – Defined contribution plan (Note 16)	2,960	10,304	2,020	7,825
Others	170,987	517,121	132,058	387,512
Total	₩ 1,200,099	₩ 3,643,589	₩ 1,268,407	₩ 3,360,741

25. FINANCE INCOME AND COSTS:

Details of finance income and costs for the three-month and nine-month periods ended September 30, 2023 and 2022, are as follows:

(In millions of Korean won)

	2023		2022	
	Three months	Nine months	Three months	Nine months
Finance income				
Interest income ¹	₩ 101,336	₩ 229,138	₩ 71,927	₩ 190,136
Dividend income	3,230	16,573	1,212	1,538
Exchange differences	123,628	809,630	164,103	410,808
Gain related to derivative instruments	196,753	340,940	390,047	563,888
Gain related to financial instruments	30,241	34,649	12,372	15,643
Total	₩ 455,188	₩ 1,430,930	₩ 639,661	₩ 1,182,013
Finance costs				
Interest expense ²	₩ 192,383	₩ 462,476	₩ 82,099	₩ 204,890
Exchange differences	444,077	1,053,095	704,008	1,198,626
Loss related to derivative instruments	29,632	23,009	29,691	49,903
Loss related to financial instruments	(123)	1,414	4,255	4,873
Total	₩ 665,969	₩ 1,539,994	₩ 820,053	₩ 1,458,292

¹ Details of interest income for the three-month and nine-month periods ended September 30, 2023 and 2022, are as follows:

(In millions of Korean won)

	2023		2022	
	Three months	Nine months	Three months	Nine months
Deposits held by financial institutions	₩ 72,784	₩ 174,861	₩ 51,981	₩ 142,406
Other loans and receivables	28,552	54,277	19,946	47,730
Total	₩ 101,336	₩ 229,138	₩ 71,927	₩ 190,136

² Details of interest expense for the three-month and nine-month periods ended September 30, 2023 and 2022, are as follows:

(In millions of Korean won)

	2023		2022	
	Three months	Nine months	Three months	Nine months
Interest on financial institutions	₩ 100,200	₩ 279,853	₩ 30,891	₩ 60,996
Interest on lease liabilities	2,010	6,216	2,301	6,976
Interest on debentures	88,311	188,036	47,476	135,073
Other interest expenses	26,176	44,665	6,007	15,814
Capitalized interest for qualifying assets	(24,314)	(56,294)	(4,576)	(13,969)
Total	₩ 192,383	₩ 462,476	₩ 82,099	₩ 204,890

26. OTHER NON-OPERATING INCOME:

Details of other non-operating income for the three-month and nine-month periods ended September 30, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	2023		2022	
	Three months	Nine months	Three months	Nine months
Exchange differences	₩ 308,062	₩ 1,318,205	₩ 984,155	₩ 1,707,208
Gain on disposal of property, plant and equipment	14,346	18,077	42,572	43,622
Gain on disposal of intangible assets	-	191	-	8
Profit from bargain purchase	-	-	-	30,674
Insurance income	6,182	14,916	4,555	50,809
Others	13,181	39,789	7,771	29,787
Total	₩ 341,771	₩ 1,391,178	₩ 1,039,053	₩ 1,862,108

27. OTHER NON-OPERATING EXPENSES:

Details of other non-operating expenses for the three-month and nine-month periods ended September 30, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>	2023		2022	
	Three months	Nine months	Three months	Nine months
Exchange differences	₩ 348,760	₩ 1,081,273	₩ 765,205	₩ 1,353,776
Loss on disposal of property, plant and equipment	16,171	73,519	17,631	42,087
Loss on disposal of intangible assets	23,962	24,779	3,208	22,358
Impairment loss on property, plant and equipment (Note 11)	2,174	4,160	29,164	48,370
Impairment loss on intangible assets (Note 12)	-	-	274	287
Loss on disasters	951	16,990	8,876	22,251
Donations	3,098	14,907	2,731	13,766
Others	13,590	42,220	4,609	31,302
Total	₩ 408,706	₩ 1,257,848	₩ 831,698	₩ 1,534,197

28. TAX EXPENSE AND DEFERRED TAX:

Income tax expense is recognized based on the best estimate of weighted-average annual income tax rate expected for the full financial year. The estimated average annual income tax rate used for the year ending December 31, 2023, is 16.3% (the estimated tax rate for the year ended December 31, 2022: 25.5%).

29. EARNINGS PER SHARE:

Basic earnings per share are calculated by dividing the profit attributable to owners 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 at 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 three-month and nine-month periods ended September 30, 2023 and 2022, are computed as follows:

Basic earnings per ordinary share from continuing operations

*(In millions of Korean won and
in number of shares)*

	2023		2022	
	Three months	Nine months	Three months	Nine months
Profit from continuing operations attributable to ordinary shares ¹	357,843	1,264,183	526,485	1,662,191
Weighted-average number of ordinary shares outstanding	<u>70,592,343</u>	<u>70,592,343</u>	<u>70,224,814</u>	<u>70,224,814</u>
Basic earnings per ordinary share from continuing operations <i>(in Korean won)</i>	<u>5,069</u>	<u>17,908</u>	<u>7,497</u>	<u>23,670</u>

Basic earnings per ordinary share

*(In millions of Korean won and
in number of shares)*

	2023		2022	
	Three months	Nine months	Three months	Nine months
Profit attributable to ordinary shares ¹	378,626	1,279,600	553,440	1,768,072
Weighted-average number of ordinary shares outstanding	<u>70,592,343</u>	<u>70,592,343</u>	<u>70,224,814</u>	<u>70,224,814</u>
Basic earnings per ordinary shares <i>(in Korean won)</i>	<u>5,364</u>	<u>18,127</u>	<u>7,881</u>	<u>25,177</u>

Basic earnings per preferred share from continuing operations

(In millions of Korean won and
in number of shares)

	2023		2022	
	Three months	Nine months	Three months	Nine months
Profit from continuing operations attributable to preferred share ¹	39,329	137,968	57,983	182,232
Weighted-average number of preferred shares outstanding	7,682,759	7,682,759	7,682,759	7,682,759
Basic earnings per preferred share from continuing operations (in Korean won)	5,119	17,958	7,547	23,720

Basic earnings per preferred share

(In millions of Korean won and
in number of shares)

	2023		2022	
	Three months	Nine months	Three months	Nine months
Profit attributable to preferred shares ¹	41,591	139,647	60,932	193,815
Weighted-average number of preferred shares outstanding	7,682,759	7,682,759	7,682,759	7,682,759
Basic earnings per preferred shares (in Korean won)	5,414	18,177	7,931	25,227

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

(In millions of Korean won)

	2023		2022	
	Three months	Nine months	Three months	Nine months
Profit from continuing operations attributable to the owners of the Parent Company	397,172	1,402,151	584,468	1,844,423
Ordinary shares dividends (A)	113,345	383,638	210,674	632,023
Preferred shares dividends (B)	12,720	42,136	23,432	69,529
Undistributed earnings from continuing operation for the period	271,107	976,377	350,362	1,142,871
Undistributed earnings available for ordinary shares (C)	244,498	880,545	315,811	1,030,168
Undistributed earnings available for preferred shares (D)	26,609	95,832	34,551	112,703
Profit from continuing operations for the period attributable to ordinary shares (A+C)	357,843	1,264,183	526,485	1,662,191
Profit from continuing operations for the period attributable to preferred shares (B+D)	39,329	137,968	57,983	182,232

(In millions of Korean won)

	2023		2022	
	Three months	Nine months	Three months	Nine months
Profit attributable to the owners of the Parent Company	420,217	1,419,247	614,372	1,961,887
Ordinary shares dividends (A)	113,345	383,638	210,674	632,023
Preferred shares dividends (B)	12,720	42,136	23,433	69,529
Undistributed earnings for the period	294,152	993,473	380,265	1,260,335
Undistributed earnings available for ordinary shares (C)	265,281	895,962	342,766	1,136,049
Undistributed earnings available for preferred shares (D)	28,871	97,511	37,499	124,286
Profit for the period attributable to ordinary shares (A+C)	378,626	1,279,600	553,440	1,768,072
Profit for the period attributable to preferred shares (B+D)	41,591	139,647	60,932	193,815

For the nine-month periods ended September 30, 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.

Basic and diluted earnings (losses) per share attributable to ordinary and preferred shares from discounted operations for the three-month and nine-month periods ended September 30, 2023 and 2022, are as follows:

(In Korean won)

	2023		2022	
	Three months	Nine months	Three months	Nine months
Basic earnings per ordinary share from discounted operations	295	219	384	1,507
Basic earnings per preferred share from discounted operations	295	219	384	1,507
Diluted earnings per ordinary share from discounted operations	295	219	384	1,507
Diluted earnings per preferred share from discounted operations	295	219	384	1,507

30. DIVIDENDS:

Details of dividends of the Parent Company for the nine-month periods ended September 30 2023 and 2022, are as follows:

*(In millions of Korean won and
in number of shares)*

	2023		2022	
	Ordinary shares	Preferred shares	Ordinary shares	Preferred shares
Total number of shares issued based on dividends	70,592,343	7,688,800	70,592,343	7,688,800
Number of treasury shares at the record date	-	(6,041)	(367,529)	(6,041)
Number of shares entitled to dividends	70,592,343	7,682,759	70,224,814	7,682,759
Dividend per share <i>(in Korean won)</i>	10,000	10,050	12,000	12,050
Total dividend amount	₩ 705,923	₩ 77,212	₩ 842,698	₩ 92,577

31. RELATED-PARTY TRANSACTIONS:

(1) Details of related parties as of September 30, 2023, and December 31, 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.			
VINA Plasticizers Chemical Co., Ltd.			
LG Toray Hungary Battery Separator Kft.			
SEETEC Co., Ltd.			
PT.HLI Green Power.			
Jiangxi VL Battery Co., Ltd. ³			
Sam-a Aluminium Company, Limited ⁴			

Related party	Related party's subsidiary (domestic)	Related party's subsidiary (overseas)	Related party's associates and joint ventures
NEXPO Co., Ltd. ⁴			
Mintech Co., Ltd. ⁵			
<LG Enterprise group ^{6,7} >			
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. ⁸		GIIR America Inc. and others	
<Other ⁹ >			
Shanjin Optoelectronics(Suzhou) Co.,Ltd.		Shanjin Optoelectronics (Nanjing) Co., Ltd. and others	

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 nine-month period ended September 30, 2023, the Group disposed 100% ownership shares of VINFAST LITHIUM BATTERY PACK LLC. Therefore, it was excluded from the related parties.

³ During the nine-month period ended September 30, 2023, the Group decided on the non-reciprocal transfer and recognized impairment losses on the carrying amount.

⁴ During the nine-month period ended September 30, 2023, the Group newly acquired shares of the company.

⁵ 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.

⁶ 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.

⁷ 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.

⁸ During the nine-month period ended September 30, 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.

⁹ A company that is not a subsidiary, associate or joint venture of a consolidated company, but falls within the scope of related parties in K-IFRS 1024.

- (2) Sales and purchases with related parties for the nine-month periods ended September 30, 2023 and 2022, are as follows:

(In millions of Korean won)	For the nine-month period ended September 30, 2023						
	Purchase and others						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		
Entity with a significant influence over the Group							
LG Corp.	₩ -	₩ -	₩ -	₩ -	₩ 146	₩ 86,700	
Associates and joint ventures							
SEETEC Co., Ltd.	74,744	198,082	8	2,927	300	71,528	
TECWIN Co., Ltd.	-	138	145	-	-	134	
HUAJIN NEW ENERGY MATERIALS (QUZHOU) CO., LTD.	230	539,890	-	-	-	-	
PT. HLI Greenpower Co., Ltd.	35,087	-	-	-	-	9,512	
Others	37,636	28,486	206	-	-	132	
Other related parties							
D&O Corp. and its subsidiaries and associates	86	12,952	689,801	-	-	85,612	
LG CNS Co., Ltd. and its subsidiaries	29,607	2,443	521,726	-	13	204,375	
Others	66	-	-	-	-	58,922	
Others							
LG Display Co., Ltd. and its subsidiaries	341,779	109	-	-	-	200	
LG Electronics Inc. and its subsidiaries and joint ventures	2,023,183	246,161	533,967	-	268	55,470	
Shanjin Optoelectronics (Suzhou) Co., Ltd. and its subsidiaries	375,236	344	-	-	-	12,141	
Others	7,526	22,555	243	632	64	5,427	
Total	<u>₩ 2,925,180</u>	<u>₩ 1,051,160</u>	<u>₩ 1,746,096</u>	<u>₩ 3,559</u>	<u>₩ 791</u>	<u>₩ 590,153</u>	

For the nine-month period ended September 30, 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
<i>(In millions of Korean won)</i>						
Entity with a significant influence over the Group						
LG Corp.	₩ -	₩ -	₩ 1,273	₩ -	₩ 131	₩ 79,589
Associates and joint ventures						
SEETEC Co., Ltd.	97,135	176,405	-	-	298	61,053
TECWIN Co., Ltd.	-	330	1,646	-	-	92
HUAJIN NEW ENERGY MATERIALS (QUZHOU) CO., LTD.	-	234,594	-	-	-	-
PT. HLI Greenpower Co., Ltd.	34,471	-	-	-	-	-
Others	3,345	8,256	-	-	-	143
Other related parties						
D&O Corp. and its subsidiaries	165	5,197	356,480	-	-	70,793
LG CNS Co., Ltd. and its subsidiaries	14,772	2,372	362,190	-	13	153,065
Others	-	-	-	-	-	38,951
Others						
LG Display Co., Ltd. and its subsidiaries	436,421	40	-	-	10	71
LG Electronics Inc. and its subsidiaries and joint ventures	1,054,606	295,966	344,701	-	285	27,161
LX International Corp. and its subsidiaries	43,477	266,666	79,395	-	9	812,884
LX Hausys, Ltd. and its subsidiaries	147,990	4,552	1,048	-	-	3
LX MMA Corporation ¹	111,379	109,790	-	-	-	2,582
Shanjin Optoelectronics (Suzhou) Co., Ltd. and its subsidiaries	399,150	19,928	-	-	-	21,265
Others	8,147	27,964	59	-	38	6,377
Total	<u>₩ 2,351,058</u>	<u>₩ 1,152,060</u>	<u>₩ 1,146,792</u>	<u>₩ -</u>	<u>₩ 784</u>	<u>₩1,274,029</u>

¹ Net sales and purchase amounts after offsetting for Raffinate transactions with LX MMA Corporation.

(3) Balances of receivables and payables arising from sales and purchases of goods and services as at September 30, 2023, and December 31, 2022, are as follows:

	September 30, 2023			
	Receivables			
(In millions of Korean won)	Trade receivables and others	Loan receivables	Other receivables	Total
Entity with a significant influence over the Group				
LG Corp.	₩ -	₩ -	₩ 13,920	₩ 13,920
Associates and joint ventures				
SEETEC Co., Ltd.	5,612	-	916	6,528
TECWIN Co., Ltd.	-	-	-	-
HUAJIN NEW ENERGY MATERIALS(QUZHOU) CO., LTD.	-	-	13,419	13,419
PT. HLI Greenpower Co., Ltd.	192	-	2,596	2,788
Others	7,051	-	-	7,051
Other related parties				
D&O Corp. and its subsidiaries and associates ¹	-	-	-	-
LG CNS Co., Ltd. and its subsidiaries	5,037	-	-	5,037
Others	-	-	-	-
Others				
LG Display Co., Ltd. and its subsidiaries	200,097	-	266	200,363
LG Electronics Inc. and its subsidiaries and joint ventures ¹	545,215	-	4,889	550,104
Shanjin Optoelectronics (Suzhou) Co., Ltd. and its subsidiaries	112,558	-	27	112,585
Others	112	-	1,896	2,008
Total	₩ 875,874	₩ -	₩ 37,929	₩ 913,803

		September 30, 2023			
		Payables			Total
		Trade payables	Borrowings	Lease liabilities	Other payables
<i>(In millions of Korean won)</i>					
Entity with a significant influence over the Group					
LG Corp.	₩	-	₩	-	₩ 3,060
Associates and joint ventures					
SEETEC Co., Ltd.		21,284	-	20,662	10,964
TECWIN Co., Ltd.		-	-	-	30
HUAJIN NEW ENERGY MATERIALS(QUZHOU) CO., LTD.		132,369	-	-	-
PT. HLI Greenpower Co., Ltd.		-	-	-	63,133
Others		5,366	-	-	44
Other related parties					
D&O Corp. and its subsidiaries and associates ¹		-	-	-	352,842
LG CNS Co., Ltd. and its subsidiaries		779	-	308	281,743
Others		-	-	-	1,769
Others					
LG Display Co., Ltd. and its subsidiaries		45	-	99	38
LG Electronics Inc. and its subsidiaries and joint ventures ¹		78,670	-	16,517	227,868
Shanjin Optoelectronics (Suzhou) Co., Ltd. and its subsidiaries		279	-	-	1,448
Others		3,951	-	3,686	6,076
Total	₩	242,743	₩	-	₩ 44,332
					₩ 966,463
					₩ 1,253,538

		September 30, 2023			
		Payables			
		Trade payables	Borrowings	Lease liabilities	Other payables
		December 31, 2022			
		Receivables			
		Trade receivables and others	Loan receivables	Other receivables	Total
(In millions of Korean won)					
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
					16,223
TECWIN Co., Ltd.		-		-	-
					-
HUAJIN NEW ENERGY MATERIALS(QUZHOU) CO., LTD.		9,453		-	-
					9,453
PT. HLI Greenpower					1,311
					1,311
Others		-		-	-
					-
Other related parties					
D&O Corp. and its subsidiaries and affiliates		-		-	-
					-
LG CNS Co., Ltd. and its subsidiaries		5,782		-	319
					6,101
Others		-		-	5
					5
Others					
LG Display Co., Ltd. and its subsidiaries		78,507		-	419
					78,926
LG Electronics Inc. and its subsidiaries and joint ventures ¹		396,289		-	27,917
					424,206
Shanjin Optoelectronics (Suzhou) Co., Ltd. and its subsidiaries		57,361		-	1,792
					59,153
Others		42		-	2,923
					2,965
Total	₩	562,436	₩	-	₩
					46,242
					₩
					608,678

	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.	₩ -	₩ -	₩ 12,232	₩ 30,349	₩ 42,581
Associates and joint ventures					
SEETEC Co., Ltd.	29,368	-	19,127	10,939	59,434
TECWIN Co., Ltd.	-	-	-	328	328
HUAJIN NEW ENERGY MATERIALS(QUZHOU) CO., LTD.	34,300	-	-	-	34,300
PT. HLI Greenpower	-	-	-	88,093	88,093
Others	1	-	-	47	48
Other related parties					
D&O Corp. and its subsidiaries and affiliates	-	-	-	497,005	497,005
LG CNS Co., Ltd. and its subsidiaries	536	-	1,221	495,940	497,697
Others	-	-	-	1,168	1,168
Others					
LG Display Co., Ltd. and its subsidiaries	28	-	454	47	529
LG Electronics Inc. and its subsidiaries and joint ventures ¹	77,581	-	17,264	162,152	256,997
Shanjin Optoelectronics (Suzhou) Co., Ltd. and its subsidiaries	449	-	-	16,965	17,414
Others	1,488	-	2,146	7,404	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.

- (4) Fund transactions with related parties for the nine-month periods ended September 30, 2023 and 2022, are as follows:

	2023													
							Loans		Borrowings ¹					
(In millions of Korean won)	Dividends received		Dividends paid		Equity contributions in cash (capital reduction)		Loans	Repayment	Borrowings	Repayment				
Entity with a significant influence over the Group														
LG Corp.	₩	-	₩	235,342	₩	-	₩	-	₩	-	₩	-	₩	9,075
Associates and joint ventures														
SEETEC Co., Ltd.		5,000		-		-		-		-		2,927		905
KOREA PRECURSOR CO., LTD.		-		-		20,384		-		-		-		-
Sam-A Aluminium Co., Ltd.		-		-		46,575		-		-		-		-
VINA PLASTICIZERS CHEM		4,444		-		-		-		-		-		-
NEXPO Co., Ltd		-		-		2,375		-		-		-		-
Mintech Co., Ltd		-		-		7,020		-		-		-		-
Other related parties														
LG CNS Co., Ltd.		-		-		-		-		-		-		913
Others														
LG Display America, Inc.		-		-		-		-		-		-		130
LG Electronics Deutschland GmbH		-		-		-		-		-		-		157
LG ELECTRONICS WROCLAW SP. Z O.O.		-		-		-		-		-		-		741
LG HOUSEHOLD & HEALTH CARE LTD.		-		-		-		-		-		632		729
Total	₩	9,444	₩	235,342	₩	76,354	₩	-	₩	-	₩	3,559	₩	12,650

	2022													
					Equity contributions in cash (capital reduction)				Loans		Borrowings ¹			
(In millions of Korean won)	Dividends received		Dividends paid				Loans		Repayment		Borrowings		Repayment	
Entity with a significant influence over the Group														
LG Corp.	₩	-	₩	282,411	₩	-	₩	-	₩	-	₩	-	₩	8,865
Associates and joint ventures														
SEETEC Co., Ltd.		5,000		-		-		-		-		1		717
LG Toray Hungary Battery Separator Kft		-		-		483,638		-		-		-		-
KOREA PRECURSOR CO., LTD.		-		-		20,384		-		-		-		-
Other related parties														
LG CNS Co., Ltd.		-		-		-		-		-		-		891
Others														
LG Display America, Inc.		-		-		-		-		-		-		129
LX Pantos Poland sp.z.o.o		-		-		-		-		-		62		7
PANTOS LOGISTICS MEXICO S.A. de C.V		-		-		-		-		-		2,384		320
LX PANTOS TURKEY LOJISTIK		-		-		-		-		-		337		41
LG Electronics Deutschland GmbH		-		-		-		-		-		-		218
LG ELECTRONICS WROCLAW SP. Z O.O.		-		-		-		-		-		-		1,047
LG HOUSEHOLD & HEALTH CARE LTD.		-		-		-		-		-		-		469
Total	₩	5,000	₩	282,411	₩	504,022	₩	-	₩	-	₩	2,784	₩	12,704

¹ The amounts represent lease liabilities that were recognized or repaid for the nine-month periods ended September 30, 2023 and 2022.

- (5) Compensation for key management of the Group for the nine-month periods ended September 30, 2023 and 2022, consists of the following:

	2023		2022	
(In millions of Korean won)				
Short-term employee benefits	₩	109,858	₩	90,609
Postemployment benefits		10,583		9,011
Total	₩	120,441	₩	99,620

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 September 30, 2023, and December 31, 2022; therefore, there are no impairment losses recognized against the receivables from related parties for the nine-month period ended September 30, 2023, and for the year ended December 31, 2022.

As at September 30, 2023, payment guarantees provided by the Group for related parties are listed in Note 18.

32. CASH FLOWS:

Cash generated from operations for the nine-month periods ended September 30, 2023 and 2022, is as follows:

(In millions of Korean won)

	2023	2022
Profit before income tax		
Profit before income tax from continuing operations	₩ 2,280,345	₩ 2,798,290
Profit before income tax from discontinued operations	14,309	122,414
	<u>2,294,654</u>	<u>2,920,704</u>
Adjustments for		
Depreciation	2,599,969	2,275,556
Amortization	295,702	212,444
Postemployment benefits	123,751	157,783
Finance income	(734,780)	(894,735)
Finance costs	957,933	1,292,916
Foreign exchange differences	(86,501)	(304,003)
Loss (gain) on valuation of inventories	(114,768)	121,246
Gain on disposal of property, plant and equipment	(17,987)	(76,829)
Gain on disposal of intangible assets	(191)	(8)
Loss on disposal of property, plant and equipment	73,659	42,675
Loss on disposal of intangible assets	24,845	22,930
Impairment loss on property, plant and equipment	4,160	48,064
Impairment loss on intangible assets	-	314
Impairment loss on investments	12,549	-
Impairment loss on investments in associates and joint ventures	2,010	-
Additions to provisions	746,714	305,199
Other income/expenses	77,512	3,187
Decrease (increase) in inventories	1,714,858	(3,940,452)
Increase in trade receivables	(839,340)	(1,641,197)
Decrease (increase) in other receivables	(607,621)	75,187
Decrease (increase) in other current assets	116,960	(408,512)
Increase (decrease) in trade payables	(289,095)	780,256
Increase in other payables	216,402	125,015
Increase (decrease) in other current liabilities	(344,050)	139,972
Decrease in provisions	(828,836)	(1,118,643)
Decrease in net defined benefit liabilities	(7,481)	(1,367)
Other cash flows from operations	118,280	(43,255)
Cash generated from operations	<u>₩ 5,509,308</u>	<u>₩ 94,447</u>

Changes in liabilities arising from financial activities for the nine-month periods ended September 30, 2023 and 2022, are as follows:

2023							
<i>(In millions of Korean won)</i>	As at January 1, 2023		Cash flows from financing activities	Non-cash transactions			As at September 30, 2023
				Acquisition	Amortization	Others	
Borrowings	₩	7,609,924	₩ 1,284,882	₩ -	₩ 270	₩ 512,301	₩ 9,407,377
Debentures		7,964,957	4,298,138	-	26,754	(264,556)	12,025,293
Lease liabilities		389,638	(90,494)	453,039	-	(277,197)	474,986
Other payables for the reverse factoring arrangement		-	(694,580)	-	-	825,480	130,900
Total	₩	<u>15,964,519</u>	₩ <u>4,797,946</u>	₩ <u>453,039</u>	₩ <u>27,024</u>	₩ <u>796,028</u>	₩ <u>22,038,556</u>

2022							
<i>(In millions of Korean won)</i>	As at January 1, 2022		Cash flows from financing activities	Non-cash transactions			As at September 30, 2022
				Acquisition	Amortization	Others	
Borrowings	₩	6,373,909	₩ 1,384,503	₩ -	₩ -	₩ 579,970	₩ 8,338,382
Debentures		8,072,580	(271,766)	-	5,981	569,035	8,375,830
Lease liabilities		319,245	(69,974)	141,254	-	12,033	402,558
Other payables for the reverse factoring arrangement		299,645	(299,645)	-	-	-	-
Total	₩	<u>15,065,379</u>	₩ <u>743,118</u>	₩ <u>141,254</u>	₩ <u>5,981</u>	₩ <u>1,161,038</u>	₩ <u>17,116,770</u>

Significant non-cash transactions for the nine-month periods ended September 30, 2023 and 2022, are as follows:

<i>(In millions of Korean won)</i>		2023		2022
Reclassification of construction in progress	₩	8,876,980	₩	4,307,108
Reclassification of machinery in transit		154,692		75,914
Reclassification of long-term borrowings into current portion		2,321,366		2,216,099
Other payables related to acquisitions of property, plant and equipment and intangible assets		283,522		1,575,205
Reclassification of other payables under the reverse factoring arrangement		825,480		-
Reclassification of non-current assets held for sale		194,842		23,129
Reclassification of non-current liabilities held for sale		20,219		15

33. **SEGMENT INFORMATION:**

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

Segment	Products or services	Major customers
Petrochemicals	ABS, PC, PE, PP, Acrylic, Alcohol, SAP, PVC, Synthetic rubber, Special resin, BPA, Ethylene, Propylene and others	LG Electronics Inc., OCI Group Co. Ltd., Mitsubishi Corp. and others
LG Energy solution	Mobile batteries, Automotive batteries, Electricity storage batteries and others	Hewlett-Packard Co., GM Corp. and others
Advanced materials	Automotive components, LCD Photoresist, OLED materials, anodic materials and others	LG Display Co., Ltd., Samsung Display Co., Ltd., BOE, AUO and others
Life sciences	Growth hormone, Vaccine, Antidiabetic, agricultural chemicals and others	UNICEF, Intervet, SOUSAM IMPORTACAO E EXPORTACAO LTDA and others
Common and others ¹	Crop protection products, Seeds, Fertilizers, General management, sales and R&D and others	National Agriculture Cooperative Federation and others

¹ The management approved to dispose 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 is disclosed in Note 34.

Segment information on revenue, profit and loss for the nine-month periods ended September 30, 2023 and 2022, are as follows:

(In millions of Korean won)	2023						
	Petro-chemicals	LG Energy solution	Advanced materials	Life sciences	Common and others ³	Total	
Total segment revenue	₩ 13,548,661	₩ 25,744,146	₩ 6,088,368	₩ 886,323	₩ 665,242	₩ 46,932,740	
Intersegment revenue	457,924	54,866	4,252,833	39,171	12,963	4,817,757	
Revenue from external customers ¹	13,090,737	25,689,280	1,835,535	847,152	652,279	42,114,983	
Operating profit (loss) ²	(26,952)	1,825,014	531,411	22,471	(70,175)	2,281,769	
Depreciation and amortization	771,252	1,642,253	139,122	103,587	204,503	2,860,717	

(In millions of Korean won)	2022						
	Petro-chemicals	LG Energy solution	Advanced materials	Life sciences	Common and others ³	Total	
Total segment revenue	₩ 17,444,208	₩ 17,061,066	₩ 5,395,578	₩ 664,361	₩ 741,870	₩ 41,307,083	
Intersegment revenue	461,654	8,947	3,438,075	45,120	26,206	3,980,002	
Revenue from external customers ¹	16,982,554	17,052,119	1,957,503	619,241	715,664	37,327,081	
Operating profit (loss) ²	1,240,438	978,300	871,771	62,245	(382,772)	2,769,982	
Depreciation and amortization	743,550	1,323,150	124,822	64,543	194,538	2,450,603	

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 at September 30, 2023, and December 31, 2022, is as follows:

(In millions of Korean won)	September 30, 2023					
	Petro-chemicals	LG Energy solution	Advanced materials	Life sciences	Common and others	Total
Reportable segment asset ¹	₩ 15,293,874	₩ 45,128,969	₩ 7,579,237	₩ 2,689,904	₩ 6,808,037	₩ 77,500,021
Investments in associates and joint ventures	48,895	228,038	571,217	17	152,155	1,000,322
Reportable segment liability ¹	5,207,381	20,472,446	2,277,834	538,712	7,638,442	36,134,815

(In millions of Korean won)	December 31, 2022					
	Petro-chemicals	LG Energy solution	Advanced materials	Life sciences	Common and others	Total
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 condensed consolidated interim financial statements and allocated on the basis of segment operation.

External sales and non-current assets by geographical segments from continuing operations for the nine-month periods ended September 30, 2023 and 2022, and as at September 30, 2023, and December 31, 2022, are as follows:

(In millions of Korean won)	Sales		Non-current assets ¹	
	2023	2022	September 30, 2023	December 31, 2022
Korea ²	₩ 8,179,180	₩ 8,301,587	₩ 18,927,261	₩ 17,886,010
China	8,784,168	11,253,504	5,376,645	4,875,247
Asia/Oceania	4,854,163	4,182,376	333,337	229,732
America	9,118,129	4,476,452	10,554,206	4,846,029
Europe	11,128,732	8,773,424	4,915,754	4,609,954
Others	50,611	339,738	-	-
Total	<u>₩ 42,114,983</u>	<u>₩ 37,327,081</u>	<u>₩ 40,107,203</u>	<u>₩ 32,446,972</u>

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 nine-month period ended September 30, 2023, revenue to single external customers accounting for more than 10% of the Group's revenue were ₩4,564,657 million (₩3,403,034 million in previous period), all from LG Energy Solution, Ltd. And there are no single external customers who contribute more than 10% of the Group's revenue for nine-month period ended September 30, 2022.

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

34.1 Assets Held for Sale and Liabilities

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.

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 of the disposal group classified as held for sale as at September 30, 2023, and December 31, 2022, are as follows:

<i>(In millions of Korean won)</i>	September 30, 2023		December 31, 2022	
Assets of disposal group				
Property, plant and equipment	₩	110,502	₩	10,658
Intangible assets		35,721		-
Inventories		19,287		-
Trade and other receivables		19,812		-
Right-of-use assets		6,629		-
Investments in joint ventures		16,822		16,822
Other current and non-current assets		13,549		-
Total	₩	222,322	₩	27,480
Liabilities of disposal group				
Trade and non-trade payables	₩	15,919	₩	-
Other current and non-current liabilities		5,269		-
Net defined benefit liabilities (assets)		(969)		-
Total	₩	20,219	₩	-

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 September 30, 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 at 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 at 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 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.

Comprehensive income information from discontinued operation for the nine-month periods ended September 30, 2023 and 2022, are as follows:

(In millions of Korean won)	2023			
	LCD polarizer	Glass substrate	Polarizer and related material	Total
Revenue	₩ 306	₩ 1	₩ 665,019	₩ 665,326
Expense	-	(3,464)	(647,553)	(651,017)
Profit (loss) before income tax of discontinued operation	306	(3,463)	17,466	14,309
Income tax benefit (expense)	100	(1,129)	2,853	1,824
Profit (loss) after income tax of discontinued operations	₩ 406	₩ (4,592)	₩ 20,319	₩ 16,133

(In millions of Korean won)	2022			
	LCD polarizer	Glass substrate	Polarizer and related material	Total
Revenue	₩ 78,861	₩ 354	₩ 777,813	₩ 857,028
Expense	(47,892)	(2,498)	(684,224)	(734,614)
Profit (loss) before income tax of discontinued operation	30,969	(2,144)	93,589	122,414
Income tax benefit (expense)	1,793	524	(7,552)	(5,235)
Profit (loss) after income tax of discontinued operations	₩ 32,762	₩ (1,620)	₩ 86,037	₩ 117,179

Net cash flows from discontinued operations for the nine-month periods ended September 30, 2023 and 2022, are as follows:

(In millions of Korean won)	2023			
	LCD polarizer	Glass substrate	Polarizer and related material	Total
Net cash inflow (outflow) from operating activities	₩ (14,328)	₩ (3,945)	₩ 64,211	₩ 45,938
Net cash inflow (outflow) from investing activities	(24)	(26)	(12,107)	(12,157)
Net cash inflow (outflow) from financing activities	-	-	(20,160)	(20,160)

(In millions of Korean won)	2022			
	LCD polarizer	Glass substrate	Polarizer and related material	Total
Net cash inflow (outflow) from operating activities	₩ 14,846	₩ (2,322)	₩ (51,755)	₩ (39,231)
Net cash inflow (outflow) from investing activities	127,624	604	(57,214)	71,014
Net cash inflow (outflow) from financing activities	(142,470)	1,718	-	(140,752)

35. ASSETS AND LIABILITIES RELATED TO CONTRACTS WITH CUSTOMERS:

Assets and liabilities recognized by the Group related to contracts with customers as at September 30, 2023, and December 31, 2022, are as follows:

<i>(In millions of Korean won)</i>	September 30, 2023		December 31, 2022	
Contract assets				
Due from customers for contract work	₩	44,433	₩	11,570
Total contract assets	₩	44,433	₩	11,570
Contract liabilities				
Advances in relation to revenue from the Group's main business activities	₩	261,316	₩	364,763
Expected customer incentives		95,253		6,277
Unearned revenue		103,770		140,024
Due to customers for contract work		2,846		14,315
Total contract liabilities	₩	463,185	₩	525,379

Revenue recognized in relation to contract liabilities

The following table shows how much of the revenue recognized during the current quarter and previous 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	₩	262,235	₩	220,253
Advances in relation to revenue from the Group's main business activities		220,280		179,504
Unearned revenue		41,955		40,749
Revenue recognized from performance obligations satisfied in previous periods		-		-

36. INVESTMENT PROPERTIES:

Details of investment properties as at September 30, 2023, and December 31, 2022, are as follows:

(In millions of Korean won)	September 30, 2023			
	Cost	Accumulated depreciation	Accumulated impairment	Book amount
Land	₩ 4,475	₩ (72)	₩ (497)	₩ 3,906
Buildings	123,757	(18,466)	(18,252)	87,039
Total	<u>₩ 128,232</u>	<u>₩ (18,538)</u>	<u>₩ (18,749)</u>	<u>₩ 90,945</u>

(In millions of Korean won)	December 31, 2022			
	Cost	Accumulated depreciation	Accumulated impairment	Book amount
Land	₩ 5,287	₩ (46)	₩ (497)	₩ 4,744
Buildings	123,296	(15,764)	(18,250)	89,282
Total	<u>₩ 128,583</u>	<u>₩ (15,810)</u>	<u>₩ (18,747)</u>	<u>₩ 94,026</u>

Changes in investment properties for the nine-month period ended September 30, 2023, and for the year ended December 31, 2022, are as follows:

(In millions of Korean won)	September 30, 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	-	323	323	1,562	60,018	61,580
Disposals/transfers	(812)	(4)	(816)	(486)	(1,493)	(1,979)
Depreciation	(26)	(2,562)	(2,588)	(46)	(3,130)	(3,176)
Impairment ¹	-	-	-	(497)	(18,199)	(18,696)
Ending balance	<u>₩ 3,906</u>	<u>₩ 87,039</u>	<u>₩ 90,945</u>	<u>₩ 4,744</u>	<u>₩ 89,282</u>	<u>₩ 94,026</u>

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 qualifications 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 at September 30, 2023, is ₩107,301 million (December 31, 2022: ₩102,298 million).

During the nine-month period ended September 30, 2023, rental income from investment properties under operating lease is ₩4,652 million (2022: ₩5,045 million), and operating expenses incurred for investment properties that generated rental income (including maintenance and repair expenses) are ₩2,516 million (2022: ₩1,066 million). During the nine-month period that ended September 30, 2023, there are no operating expenses incurred for investment properties that do not generate rental income (including maintenance and repair expenses) (2022: ₩6 million).

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 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 at September 30, 2023, and December 31, 2022, are as follows:

<i>(In millions of Korean won)</i>	September 30, 2023		December 31, 2022	
Within one year	₩	2,875	₩	8,575
Within two years		2,049		2,039
Within five years		4,591		6,106
Total	₩	<u>9,515</u>	₩	<u>16,720</u>

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.

<i>(In millions of Korean won)</i>	Amount	
Consideration transferred		
Cash and cash equivalents	₩	701,103
Total consideration	₩	701,103
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		425,247
Goodwill (gain from a bargain purchase)		275,856
	₩	701,103

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 ₩143,933 million and ₩40,216 million, respectively.

Revenue and profit or loss of the Group for the nine-month period ended September 30, 2023, would have been ₩42,126,724 million and ₩1,898,588 million, respectively, as though the acquisition of Aveo Pharmaceuticals, Inc. had occurred as at the beginning of the nine-month period ended September 30, 2023.

The Group accounts for the business combination with provisional amounts as at September 30, 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.

(In millions of Korean won)

Amount

Consideration transferred

Cash and cash equivalents	₩	16,168
Total consideration	₩	16,168

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		46,841
Goodwill (gain from a bargain purchase)		(30,673)
	₩	16,168

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

38. EVENTS AFTER THE REPORTING PERIOD:

(1) The Group completed the sale of its diagnostic business on October 4, 2023, to reorganize its business structure and focus its capabilities on the three new growth businesses.