SAMSUNG SDI CO., LTD. AND SUBSIDIARIES

Consolidated Financial Statements

December 31, 2023 and 2022

(With Independent Auditors' Report Thereon)

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KPMG SAMJONG Accounting Corp.

152, Teheran-ro, Gangnam-gu, Seoul 06236 (Yeoksam-dong, Gangnam Finance Center 27th Floor) Republic of Korea

Tel +82 (2) 2112 0100 Fax +82 (2) 2112 0101 www.kr.kpmg.com

Independent Auditors' Report

Based on a report originally issued in Korean

To the Shareholders and Board of Directors of Samsung SDI Co., Ltd.:

Opinion

We have audited the consolidated financial statements of Samsung SDI Co., Ltd. and its subsidiaries ("the Group"), which comprise the consolidated statements of financial position as of December 31, 2023 and 2022, the consolidated statements of comprehensive income, changes in equity and cash flows for the years then ended, and notes, comprising of material accounting policy information and other explanatory information.

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

We also have audited, in accordance with Korean Standards on Auditing (KSAs), , the Group's Internal Control over Financial Reporting for consolidation purposes as of December 31, 2023 based on the criteria established in the Conceptual Framework for Designing and Operating Internal Control over Financial Reporting issued by the Operating Committee of Internal Control over Financial Reporting in the Republic of Korea, and our report dated February 23, 2024 expressed an unmodified opinion on the effectiveness of the Group's internal control over financial reporting.

Basis for Opinion

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

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements as of and for the year ended December 31, 2023. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

A. The existence of automotive battery revenue

1) Risk

The Group recognizes automotive battery revenue when it transfers the risk and control over the good to the customer. The Group's automotive battery revenue is consistently increasing, and the expectations of external stakeholders are high.

As described in note 4, the amount of automotive battery revenue is significant in the consolidated financial statements and the management's incentive to increase the revenue is high, we have determined the existence of automotive battery revenue as a key audit matter.



2) How the matter was addressed in our audit

The primary procedures we performed to address this key audit matter included the following:

- Obtained an understanding of the Group's processes related to automotive battery revenue recognition and evaluated the design and operating effectiveness of corresponding internal controls.
- Inspected the automotive battery contracts with customers on a sample basis and assessed the appropriateness of the timing of control transfer and corresponding revenue recognition in accordance with K-IFRS No. 1115.
- Assessed the existence of automotive battery revenue and the appropriateness of the timing of automotive battery revenue recognition, by inspecting the external evidence on a sample basis.

B. The Appropriateness of estimation of allowance for inventory valuation

1) Risk

The Group assesses the net realizable value and obsolescence of inventory. The evaluation includes management's judgement and estimates. As described in note 9 to the consolidated financial statements, considering the amount of allowance for inventories is significant in the consolidated financial statements and there is uncertainty in the estimates and judgments used by management, we identified the appropriateness of estimation of allowance for inventory valuation as a key audit matter.

2) How the matter was addressed in our audit

The primary procedures we performed to address this key audit matter included the following:

- Obtained an understanding of the Group's processes related to inventory valuation and evaluated the design and operating effectiveness of corresponding internal controls.
- Evaluated the reasonableness of the Group's accounting policies and methodology and assumptions applied to estimate the inventory valuation and performed recalculations.
- Assessed the accuracy of inventory aging data on a sample basis.
- Evaluated the appropriateness of the underlying data used for the estimation of the net realizable value of inventory on a sample basis.

Other Matter

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

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

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

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

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



Auditors' Responsibilities for the Audit of the Consolidated Financial Statements

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

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

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



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

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

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

The engagement partner on the audit resulting in this independent auditors' report is Cha, Jeong-Hwan.

KPMG Samjory Accounting Corp.

Seoul, Korea February 23, 2024

This report is effective as of February 23, 2024, the audit report date. Certain subsequent events or circumstances, which may occur between the audit report date and the time of reading this report, could have a material impact on the accompanying consolidated financial statements and notes thereto. Accordingly, the readers of the audit report should understand that the above audit report has not been updated to reflect the impact of such subsequent events or circumstances, if any.

As of December 31, 2023 and 2022

(In thousands of won)	Note	2023	2022
Assets			
Cash and cash equivalents	5,7 ₩	1,524,461,361	2,614,271,850
Trade and other receivables, net	5,8,32	3,402,869,055	2,933,814,799
Inventories, net	9	3,297,368,930	3,204,515,835
Other investments	5,10	602,098,501	534,662,104
Other current assets	11	353,200,052	335,800,401
Current derivative assets	5,20	7,031,294	28,637,386
Current assets		9,187,029,193	9,651,702,375
Long-term trade and other receivables, net	5,8,32	33,739,219	6,879,322
Investments in associates and joint venture	12	9,996,233,433	8,940,282,255
Property, plant and equipment, net	6,13,31	11,893,348,077	8,965,469,799
Intangible assets, net	6,14	858,929,747	814,931,163
Investment property	6,15	147,320,486	147,558,866
Deferred tax assets	29	211,071,364	168,913,514
Other non-current investments, including derivatives	5,10,20	1,364,181,993	1,245,883,337
Other non-current assets	11	93,180,479	137,715,011
Non-current derivative assets	5,20	-	6,070,438
Employee benefit assets	19	253,826,202	172,119,091
Non-current assets		24,851,831,000	20,605,822,796
Total assets	₩	34,038,860,193	30,257,525,171
Liabilities			
Trade and other payables	5,16,31,32 W	4,538,845,024	4,285,754,046
Income tax payable	29	101,894,653	229,613,881
Advance received	6	607,331,856	230,132,847
Unearned revenue	6	18,823,553	78,688,354
Short-term borrowings	5,17,34	2,868,274,952	2,851,183,214
Derivative liabilities	5,20	-	57,510
Provisions	18,20	383,763,099	331,508,976
Current liabilities		8,518,933,137	8,006,938,828
Non-current trade and other payables	4,16,31,32	541,922,917	697,531,225
Long-term advance received	6	61,184,782	50,623,505
Long-term borrowings	5,17,34	2,849,524,920	2,297,040,000
Net employee benefit liabilities	19	2,276,047	2,005,410
Non-current derivative liabilities	5,20	-	82,319
Long-term provisions	18,20	93,140,664	91,878,306
Deferred tax liabilities	29	2,064,627,748	1,893,923,422
Non-current liabilities		5,612,677,078	5,033,084,187
Total liabilities	₩	14,131,610,215	13,040,023,015
Equity			
Share capital	1,21 ₩	356,712,130	356,712,130
Share premium	21	5,001,974,693	5,001,974,693
Other components of equity	22	(345,131,584)	(345,131,584)
Accumulated other comprehensive income	23,29	1,162,152,893	1,003,816,893
Retained earnings	24	12,335,665,246	10,468,351,381
Equity attributable to owners of the Parent Company		18,511,373,378	16,485,723,513
Non-controlling interests	33	1,395,876,600	731,778,643
Total equity		19,907,249,978	17,217,502,156

 $See\ accompanying\ notes\ to\ the\ consolidated\ financial\ statements.$

(In thousands of won, except per share information)	Note	2023	2022
Revenue	6,32 ₩	22,708,300,498	20,124,069,516
Cost of sales	9,19,26,32	(18,726,384,091)	(15,903,322,834)
Gross profit		3,981,916,407	4,220,746,682
Selling, general and administrative expenses	14,19,25,26,32	(2,348,547,442)	(2,412,733,669)
Operating profit	6	1,633,368,965	1,808,013,013
Other non-operating income	27,32	76,645,597	62,998,019
Other non-operating expenses	27,32	(50,310,957)	(206,316,946)
Finance income	28	1,055,087,475	1,390,645,973
Finance costs	28	(1,245,885,498)	(1,442,761,340)
Share of income of associates and joint venture	12	1,017,238,435	1,039,696,670
Profit before income tax		2,486,144,017	2,652,275,389
Income tax expense	29	(420,097,455)	(612,913,941)
Profit for the year	24,30	2,066,046,562	2,039,361,448
Other comprehensive income			_
Items that will not be reclassified to profit or loss:			
Remeasurement of net defined benefit liabilities	19,24,29	(99,099,458)	87,645,869
Gain (loss) on valuation of financial assets at FVOCI	10	88,659,820	(166,678,917)
Related tax	29	15,507,203	(3,040,696)
Items that are or may be reclassified to profit or loss:			
Gain on valuation of derivatives instruments for cash flow hedge	20	(23,111,866)	(67,984,703)
Change in equity of equity-method accounted investees	12	(16,687,756)	(9,615,209)
Foreign operations – foreign currency translation differences		90,240,991	17,859,070
Related tax	29	10,507,100	1,937,146
Other comprehensive income for the year, net of tax		66,016,034	(139,877,440)
Total comprehensive income for the year	₩	2,132,062,596	1,899,484,008
Profit attributable to:			
Owners of the Parent Company	30 ₩	2,009,207,126	1,952,148,536
Non-controlling interests	33	56,839,436	87,212,912
Total comprehensive income attributable to:			
Owners of the Parent Company		2,094,600,653	1,848,403,992
Non-controlling interests	33	37,461,943	51,080,016
Earnings per share	30		
Basic earnings per share - Ordinary share	₩	30,044	29,191
Basic earnings per share - Preferred share	**	30,094	29,241
basic carrings per state - 1 referred state		30,034	25,241

(In thousands of won)		Share capital	Capital surplus	Other capital	Accumulated other comprehensive income	Retained earnings	Non-controlling interests	Total equity
Balance at January 1, 2022	₩	356,712,130	5,001,974,693	(345,131,584)	1,174,235,558	8,516,473,334	492,435,184	15,196,699,315
Comprehensive income								
Profit for the year Remeasurements of the defined benefit		-	-	-	-	1,952,148,536	87,212,912	2,039,361,448
plan Gain on valuation of derivatives		-	-	-	-	66,674,121	-	66,674,121
instruments for cash flow hedge Changes in fair values of financial assets at		-	-	-	(52,195,555)	-	-	(52,195,555)
FVOCI		-	-	-	(148,747,865)	-	-	(148,747,865)
Change in equity of equity-accounted investees Foreign operations – foreign currency		-	-	-	(23,467,212)	-	-	(23,467,212)
translation differences		<u> </u>	<u> </u>	<u>-</u>	53,991,967	<u> </u>	(36,132,896)	17,859,071
Total comprehensive income		<u> </u>	<u> </u>	<u>-</u>	(170,418,665)	2,018,822,657	51,080,016	1,899,484,008
Transactions with shareholders								
directly recognized in equity								
Dividends to owners of the company Capital contribution from non-controlling		-	-	-	-	(66,944,610)	(2,553,941)	(69,498,551)
interest Capital reduction of non-controlling		-	-	-	-	-	191,354,614	191,354,614
interest	_	<u>-</u>	<u> </u>	<u> </u>			(537,230)	(537,230)
Balance at December 31, 2022	₩	356,712,130	5,001,974,693	(345,131,584)	1,003,816,893	10,468,351,381	731,778,643	17,217,502,156

See accompanying notes to the consolidated financial statements.

For the years ended December 31, 2023 and 2022, Continued

Accumulated				
other				
mnrehensive				

(In thousands of won)	_	Capital stock	Capital surplus	Other capital	other comprehensive income	Retained earnings	Non-controlling interests	Total equity
Balance at January 1, 2023	₩	356,712,130	5,001,974,693	(345,131,584)	1,003,816,893	10,468,351,381	731,778,643	17,217,502,156
Comprehensive income								
Profit for the year		-	-	-	-	2,009,207,126	56,839,436	2,066,046,562
Remeasurements of the defined benefit plan Gain on valuation of derivatives		-	-	-	-	(72,942,473)	-	(72,942,473)
instruments for cash flow hedge Changes in fair values of financial assets at		-	-	-	(17,010,333)	-	-	(17,010,333)
FVOCI		-	-	-	78,010,037	-	-	78,010,037
Change in equity of equity-accounted investees Foreign operations – foreign currency		-	-	-	(12,282,188)	-	-	(12,282,188)
translation differences	_	_			109,618,484		(19,377,493)	90,240,991
Total comprehensive income		<u>-</u>			158,336,000	1,936,264,654	37,461,943	2,132,062,596
Transactions with shareholders								
directly recognized in equity								
Dividends to owners of the company		-	-	-	-	(68,950,789)	(2,605,626)	(71,556,415)
Capital contribution from non-controlling interest	_	<u>-</u>					629,241,640	629,241,640
Balance at December 31, 2023	₩	356,712,130	5,001,974,693	(345,131,584)	1,162,152,893	12,335,665,246	1,395,876,599	19,907,249,977

See accompanying notes to the consolidated financial statement.

(In thousands of won)	Note	2023	2022
Cash flows from operating activities			
Profit for the year	₩	2,066,046,562	2,039,361,448
Adjustments for expense (benefit)	34	1,497,883,704	1,415,752,593
Changes in assets and liabilities	34	(938,384,206)	(500,717,670)
Interest received		80,023,127	34,121,360
Interest paid		(221,312,632)	(81,139,252)
Dividends received		17,095,214	12,250,892
Income taxes paid	_	(397,830,255)	(278,533,207)
Net cash provided by operating activities	_	2,103,521,514	2,641,096,164
Cash flows from investing activities			
Decrease in other investments		2,889,653,378	223,573,857
Proceeds from disposal of property, plant and equipment		11,714,680	20,379,233
Proceeds from disposal of intangible assets		-	1,122,015
Disposal of subsidiaries and affiliates		2,000,000	19,709,386
Increase in government grants		99,099,063	52,827,228
Acquisition of other investments		(3,003,927,026)	(408,355,803)
Acquisition of property, plant and equipment		(4,048,246,716)	(2,808,898,170)
Acquisition of intangible assets		(12,458,762)	(4,583,865)
Acquisition of subsidiaries and affiliates		(42,680,000)	(42,010,000)
Net cash used in investing activities	_	(4,104,845,383)	(2,946,236,119)
Cash flows from financing activities			
Proceeds from short-term borrowings		4,049,049,429	1,239,602,699
Proceeds from long-term borrowings		1,005,861,108	807,737,420
Capital contribution from non-controlling interest		629,241,640	191,354,614
Dividends paid		(71,550,149)	(69,498,551)
Repayment of debentures		(220,000,000)	-
Repayment of short-term borrowings		(3,990,031,780)	(1,508,607,082)
Repayment of long-term borrowings		(463,850,373)	(1,296,152)
Capital reduction from non-controlling interest		-	(29,750)
Repayment of lease liabilities	_	(36,058,841)	(30,563,962)
Net cash provided by financing activities	_	902,661,034	628,699,236
Net increase in cash and cash equivalents		(1,098,662,835)	323,559,281
Cash and cash equivalents at January 1		2,614,271,850	2,325,692,348
Effect of fluctuations in exchange rate on cash held	_	8,852,346	(34,979,779)
Cash and cash equivalents at December 31	₩ _	1,524,461,361	2,614,271,850

See accompanying notes to the consolidated financial statements.

1. Reporting Entity

Samsung SDI Co., Ltd. (the "Parent Company" or the "Company") was incorporated on January 20, 1970 under the laws of the Republic of Korea with paid-in capital of ₩200 million, and its head office is located in Gi-heung, Gyeong-gi Do.

The consolidated financial statements comprise the Company, its subsidiaries (together referred to as the "Group" and individually as "Group entities") and the Group's interests in associates. In 1979, the Parent Company was listed on the Korean stock exchange market, and its shares are listed as depositary receipts on the Luxembourg Stock Exchange.

The major business segments and locations of domestic production facilities of the Parent Company are as follows.

Business	Major product lines	Domestic Locations
	Automotive battery,	
Energy solutions	ESS (Energy Storage System),	Ulsan, Cheon-an
	Small-sized li-ion battery	
Electronic materials	Semi-conductor and display materials	Cheong-ju, Gumi

In addition to these local business locations, the Parent Company also has 20 subsidiaries operating in the United States, China, Germany, Hungary, and so on.

Under its Articles of Incorporation, the Parent Company is authorized to issue 200,000 thousand shares with par value of $\mbox{$W5,000$}$. As of December 31, 2023, 70,382,426 shares of stock (including 1,617,896 shares of preferred stock) have been issued and are outstanding, and the Parent Company's paid-in-capital amounts to $\mbox{$W356,712$}$ million. The largest shareholder of the Parent Company is Samsung Electronics Co., Ltd. (ownership: 19.13%). The Parent Company is allowed to retire its stocks through a board resolution within its profit available for dividends to its shareholders. Pursuant to the resolution made by the board of directors on October 18, 2004, the Parent Company retired 930,000 shares of ordinary stock and 30,000 shares of preferred stock, which were acquired at $\mbox{$W99,333$}$ million on December 8, 2004 by appropriating retained earnings. The par value of outstanding shares is $\mbox{$W351,912$}$ million ($\mbox{$W343,823$}$ million for common stock and $\mbox{$W8,089$}$ million for preferred stock, excluding the retired shares) and it differs from the Group's paid-in-capital due to the share retirement.

Under its Articles of Incorporation, the Parent Company is authorized to issue 30,000 thousand shares of non-voting preferred stock. Holders of preferred shares issued before February 28, 1997 are entitled to receiving additional dividends of 1% of its par value per annum. As of December 31, 2023 1,617,896 shares of non-cumulative and non-voting preferred stocks are eligible for these additional dividends.

2. Basis of Preparation

The consolidated financial statements have been prepared in accordance with Korean International Financial Reporting Standards ("K-IFRS"), as prescribed in the Act on External Audits of Corporations in the Republic of Korea. The consolidated financial statements were authorized for issue by the Board of Directors on January 30, 2024 and will be submitted for approval to general shareholders meeting to be held on March 20, 2024.

(1) Basis of measurement

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

- Financial instruments measured at fair value.
- Liabilities for defined benefit plans recognized at the net of the total present value of defined benefit obligations less the fair value of plan assets.

(2) Functional and presentation currency

These consolidated financial statements are presented in Korean won, which is the Parent Company's functional currency and the currency of the primary economic environment in which the Group operates.

(3) Use of estimates and judgments

The preparation of the consolidated financial statements in conformity with K-IFRS requires management to use estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income, and expenses based on the management's best judgment. Actual results may differ from these estimates.

Estimates and underlying assumptions are reviewed on an ongoing basis. Change in accounting estimates is recognized during the period in which the change is made and during any future periods it may affect.

Information about critical judgments in applying accounting policies that have the most significant effect on the amounts recognized in the consolidated financial statements is included in the following notes:

- Note 4: Consolidation: whether the Group has de facto control over an investee;
- Note 12: Investments in associates: whether the Group has significant influence over an investee; and
- Note 31: Lease term: whether the Group is reasonably certain to exercise extension options

Information about uncertainties of assumptions and estimation that have a significant risk of resulting in a material adjustment within the next financial year is included in the following notes:

- Note 9: Inventory Allowance for valuation Key assumptions of net realizable value measurement
- Note 14: Intangible Assets- key assumptions underlying recoverable amounts
- Note 18: Provisions key assumptions about likelihood and magnitude of an outflow of resources; and
- Note 19: measurement of defined benefit obligations: key actuarial assumptions

2. Basis of Preparation, Continued

(4) Fair value measurement

Group's accounting policies and disclosures require the measurement of fair values, for both financial and non-financial assets and liabilities. The Group has an established control framework with respect to the measurement of fair values. This includes a valuation team that has overall responsibility for overseeing all significant fair value measurements, including Level 3 fair values, and the results are reported directly to the CFO.

The valuation team regularly reviews significant unobservable inputs and valuation adjustments. If third party information, such as broker quotes or pricing services, is used to measure fair values, then the valuation team measures the evidence obtained from the third parties to support the conclusion that such valuations meet the requirements of K-IFRS, including the level in the fair value hierarchy in which such valuations should be classified.

Significant valuation issues are reported to the Group's Audit Committee.

When measuring the fair value of an asset or a liability, the Group uses market observable data as far as possible. Fair values are categorized into different levels in the fair value hierarchy based on the inputs used in the valuation techniques as follows.

- Level 1: quoted prices (unadjusted) in accessible active markets for identical assets or liabilities
- Level 2: inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from price)
- Level 3: inputs for the asset or liability that are not based on observable market data (unobservable inputs)

If the inputs used to measure the fair value of an asset or a liability might be categorized in different levels of the fair value hierarchy, then the fair value measurement is categorized in its entirety in the same level of the fair value hierarchy as the lowest level input that is significant to the entire measurement. The Group recognized transfers between levels of the fair value hierarchy at the end of the reporting period during which the change has occurred.

Further information about the assumptions made in measuring fair values is included in following note:

- Note 5: Financial Risk Management

SAMSUNG SDI CO., LTD. AND SUBSIDIARIES
Notes to the Consolidated Financial Statements

For the years ended December 31, 2023 and 2022

3. Changes in Accounting Policies

(1) Global Minimum Tax

The Group applied the amendments to the International Tax Reform - Pillar 2 Model Rules (Corporate Tax, K-IFRS No. 1012) from January 1, 2023. These amendments include a mandatory rule temporarily exempting deferred income tax accounting treatment for the Global Minimum Tax. It also requires additional disclosure of exposure information related to Pillar 2 Corporate Tax. The impact of these amendments on the Group is explained in Note 29.

(2) Material accounting policies information

The group applied the amendments to disclosures of accounting policies(K-IFRS No. 1001, 'Presentation of financial statements') from January 1, 2023. These amendments do not result in a change to the accounting policies themselves but impact the accounting policy information disclosed in these consolidated financial statements. The amendments require the disclosure of 'material' accounting policies rather than 'significant' accounting policies. Also, by providing guidelines for applying materiality to accounting policy disclosures, it enables users of the consolidated financial statements to understand company-specific accounting policy information. The management of the Group has reviewed the accounting policies and updated material accounting policy(previous year: significant accounting policies) information disclosed in Note 4 in accordance with these amendments.

4. Material Accounting Policies

Material accounting policies applied by the Group in preparing its consolidated financial statements in accordance with K-IFRS are described below. The Group has consistently applied the following accounting policies to all periods presented in these consolidated financial statements except for the changes in accounting policies explained in Note 3.

The group applied the amendments to disclosures of accounting policies(K-IFRS No. 1001, 'Presentation of financial statements') from January 1, 2023. These amendments require the disclosure of 'material' accounting policies, not 'significant' accounting policies. These amendments do not result in a change to the accounting policies themselves but impact the accounting policy information disclosed in these consolidated financial statements.

(1) Basis of consolidation

1) Subsidiaries

If a member of the Group uses accounting policies other than those adopted in the consolidated financial statements for like transactions and events in similar circumstances, appropriate adjustments are made to its financial statements in preparing the consolidated financial statements.

Non-controlling interests ("NCI") are measured at their proportionate share of the acquiree's identifiable net assets at the acquisition date.

4. Material Accounting Policies, Continued

- (1) Consolidation, continued
- 1) Subsidiaries, continued
- (i) The list of subsidiaries as of December 31, 2023 and 2022 are as follows: All subsidiaries' fiscal year end is December 31.

		_	Percenta ownershi	•
Subsidiaries	Location	Primary business	2023	2022
Samsung SDI Japan Co., Ltd. ("SDIJ") Samsung SDI America, Inc. ("SDIA")	Japan U.S.A.	Supporting sales and purchase in Japan Manufacturing automotive batteries Supporting sales of automotive and ESS batteries Market research of small-sized	100.0% 91.7%	100.0% 91.7%
StarPlus Energy LLC. ("STARPLUS")	U.S.A.	rechargeable battery Manufacturing and sales of automotive battery	51.0%	51.0%
Samsung SDI Hungary Zrt. ("SDIHU")	Hungary	Manufacturing and sales of automotive battery	100.0%	100.0%
Samsung SDI Europe GmbH ("SDIEU")	Germany	Supporting sales and purchase in Europe	100.0%	100.0%
Samsung SDI Battery Systems GmbH ("SDIBS")	Austria	Manufacturing and sales of automotive battery	100.0%	100.0%
Samsung SDI Vietnam Co., Ltd. ("SDIV")	Vietnam	Manufacturing and sales of rechargeable battery	100.0%	100.0%
Samsung SDI Energy Malaysia Sdn, Bhd. ("SDIEM")	Malaysia	Manufacturing and sales of rechargeable battery	100.0%	100.0%
Samsung SDI India Pvt. ("SDII")	India	Manufacturing and sales of rechargeable battery	100.0%	100.0%
Samsung SDI (Hong Kong) Ltd. ("SDIHK")	Hong Kong	Supporting sales of rechargeable battery	97.6%	97.6%
Subsidiary of SDIHK				
Tianjin Samsung SDI Co., Ltd. ("TSDI")	China	Manufacturing and sales of rechargeable battery	78.0%	78.0%
Samsung SDI China Co., Ltd. ("SDIC")	China	Supporting sales and purchase in China	100.0%	100.0%
Samsung SDI-ARN (Xi'An) Power Battery Co., Ltd. ("SAPB")	China	Manufacturing and sales of automotive battery	65.0%	65.0%
Samsung SDI (Tianjin) Battery Co., Ltd. ("SDITB")	China	Manufacturing and sales of rechargeable battery	80.0%	80.0%
STM Co., Ltd. ("STM")	Korea	Manufacturing and sales of cathode active material for rechargeable battery	100.0%	100.0%
Samsung SDI Wuxi Co., Ltd. ("SDIW")	China	Manufacturing and sales of electronic materials products	100.0%	100.0%
Novaled GmbH ("NOVALED")	Germany	Manufacturing and sales of electronic materials products	50.1%	50.1%
SVIC 15 Fund ("SVIC 15")	Korea	Investments in new technology venture business	99.0%	99.0%
SVIC 24 Fund ("SVIC24")	Korea	Investments in new technology venture business	99.0%	99.0%
SVIC 49 Fund ("SVIC49")	Korea	Investments in new technology venture business	99.0%	99.0%

^(*1) Effective ownership interest has been measured based on ownership of the Parent Company and its subsidiaries considering the control structure. The ownership interests of subsidiaries that do not issue shares in accordance with the relevant local laws and regulations are calculated based on the investment amounts.

4. Material Accounting Policies, Continued

(1) Consolidation, continued

1) Subsidiaries, continued

(ii) Summarized financial information of subsidiaries as of and for the year ended December 31, 2023 are as follows:

(In thousands of won)

Subsidiaries	Assets	Liabilities	Equity	Revenue	Net profit (loss)
STM	660,539,765	220,117,123	440,422,642	1,433,095,355	57,159,562
SVIC24	18,593,282	12,331,492	6,261,790	-	(292,448)
SVIC15	22,824,631	3,212	22,821,419	-	(552,453)
SVIC49	54,561,776	255,267	54,306,509	-	3,802,029
SDIJ	6,906,796	2,233,363	4,673,433	10,623,368	476,389
SDIA	400,102,600	303,333,653	96,768,947	1,411,465,746	32,013,670
STARPLUS	1,798,731,227	182,982,358	1,615,748,869	-	(30,189,536)
NOVALED	735,813,983	7,491,964	728,322,019	113,746,672	45,066,855
SDIHU	7,837,660,949	6,222,472,369	1,615,188,580	8,554,123,495	190,136,045
SDIEU	30,013,685	13,003,476	17,010,209	54,939,720	6,237,042
SDIBS	318,100,290	156,984,856	161,115,434	252,937,573	23,849,693
SDIV	326,970,230	107,379,059	219,591,171	1,013,875,685	31,654,814
SDIEM	1,874,176,164	1,320,494,881	553,681,283	1,520,447,108	41,896,127
SDII	21,265,151	7,508,008	13,757,143	5,745,964	3,820,094
SDIW	601,642,075	160,965,459	440,676,616	1,018,279,160	30,840,966
TSDI	672,728,883	290,457,389	382,271,494	543,405,719	14,005,315
SDIHK	843,025,347	140,855,031	702,170,316	1,741,993	37,883,135
SDIC	19,363,561	6,364,036	12,999,525	27,455,973	3,728,866
SAPB	816,895,510	278,682,396	538,213,114	1,176,833,427	82,621,180
SDITB	1.207.356.995	691.018.488	516.338.507	2.122.676.565	57.194.803

2) Transactions eliminated on consolidation

Intra-group balances, including income and expenses and any unrealized income and expenses arising from intra-group transactions, are eliminated. Meanwhile, unrealized gains arising from transactions with equity-accounted investees are eliminated against the investment to the extent of the Group's interest in the investee. Unrealized losses are eliminated in the same way as unrealized gains, but only to the extent that there is no evidence of impairment.

3) Business combination under common control

Combination of entities and business under common control recognizes the acquired assets and liabilities obtained at book values of consolidated financial statements of ultimate controlling company. The Group recognizes the difference between the net book value acquired and consideration transferred in share premium.

4. Material Accounting Policies, Continued

(2) Foreign currency

1) Foreign currency Transactions

Exchange differences arising on the settlement of monetary items or on translating monetary items, except for translation differences from net investment in foreign operation and from financial liabilities designated to cash flow hedges, are recognized in profit or loss in the period in which they arise. If profit or loss from non-monetary items is regarded as other comprehensive income then the exchange rate change effects are treated as other comprehensive income, where regarded as current profit or loss then treated as current profit or loss.

2) Foreign Operations

The assets and liabilities of foreign operations, whose functional currency is not the currency of a hyperinflationary economy, are translated to presentation currency at exchange rates at the reporting date. The income and expenses of foreign operations are translated to functional currency at exchange rates at the dates of the transactions. Foreign currency differences are recognized in other comprehensive income.

(3) Cash and cash equivalents

The Group classifies investment assets with a maturity of within 3 months from the acquisition date as cash and cash equivalents.

(4) Financial instruments

1) Recognition and initial measurement

Trade receivables and debt securities issued are initially recognized when they are originated. All other financial assets and financial liabilities are initially recognized when the Group becomes a party to the contractual provisions of the instrument.

4. Material Accounting Policies, Continued

(4) Financial instruments, continued

2) Subsequent measurement

Business model assessment

The Group assesses the objective of the business model in which a financial asset is held at a portfolio level that best reflects the way the business is managed, and information is provided to management. The information considered includes:

- the stated policies and objectives for the portfolio and the operation of those policies in practice. These include whether management's strategy focuses on earning contractual interest income, maintaining a particular interest rate profile, matching the duration of the financial assets to the duration of any related liabilities or expected cash outflows or realizing cash flows through the sale of the assets;
- how the performance of the portfolio is evaluated and reported to the Group's management;
- the risks that affect the performance of the business model (and the financial assets held within that business model) and how those risks are managed;
- how managers of the business are compensated e.g. whether compensation is based on the fair value of the assets managed or the contractual cash flows collected; and
- the frequency, volume and timing of sales of financial assets in prior periods, the reasons for such sales and expectations about future sales activity.

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

Financial assets that are held for trading or are managed and whose performance is evaluated on a fair value basis are measured at FVTPL.

Assessment whether contractual cash flows are solely payments of principal and interest

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

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

3) Derecognition

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

4) Offsetting

Financial assets and financial liabilities are offset, and the net amount is presented in the statement of financial position when, and only when, the Group currently has a legally enforceable right to set off the amounts and it intends either to settle them on a net basis or to realize the asset and settle the liability simultaneously.

4. Material Accounting Policies, Continued

(5) Non-derivative financial liabilities

The Group classifies financial liabilities into FVTPL or other financial liabilities based on the substance of the contractual terms and the definition of financial liabilities. Recognition on the consolidated statement of financial position occurs when the Group becomes a party to the contract.

(6) Derivatives

Derivative financial instruments and hedge accounting

Accounting policies related to derivative financial instruments and hedge accounting, as well as information on risk management activities are included in Note 20.

(7) Property, plant and equipment

Property, plant and equipment, except for land, are depreciated on a straight-line basis over estimated useful lives that appropriately reflect the pattern in which the asset's future economic benefits are expected to be consumed.

The estimated useful lives of the Group's property, plant and equipment are as follows:

Oseiui lives (years)
10 ~ 60
10 ~ 40
5 ~ 10
4~5
1~5

Subsequent costs are recognized in the carrying amount of property, plant and equipment if it is probable that future economic benefits associated with the item will flow to the Group.

(8) Intangible asset

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

Amortization of intangible assets except for goodwill is calculated on a straight-line basis over the estimated useful lives of intangible assets from the date that they are available for use. The residual value of intangible assets is zero.

The estimated useful lives of the group's assets are as follows:

	Useful lives (years)
Industrial property rights	5 ~10
Others intangible assets	4 ~20

(9) Investment property

Investment property is measured initially at its cost and transaction costs are included in the initial measurement. Subsequently, investment property is carried at depreciated cost less any accumulated impairment losses.

Investment property, except for land, are depreciated on a straight-line basis over estimated useful lives that appropriately reflect the pattern in which the asset's future economic benefits are expected to be consumed.

4. Material Accounting Policies, Continued

(10) Inventories

The cost of inventories is based on specific method for materials in transit, moving average method for raw materials and sub-materials and gross average method (monthly moving average method) for all the other inventories, and includes expenditures for acquiring the inventories, production or conversion costs and other costs incurred in bringing them to their existing location and condition. In the case of manufactured inventories and work in progress, cost includes an appropriate share of production overheads based on normal operating capacity.

(11) Impairment

1) Impairment of financial assets

The Group recognizes loss allowances for ECLs on:

- financial assets measured at amortized cost;

The Group measures loss allowances at an amount equal to lifetime ECLs, except for the following, which are measured at 12-month ECLs:

- debt securities that are determined to have low credit risk at the reporting date; and
- other debt securities and bank balances for which credit risk (i.e. the risk of default occurring over the expected life of the financial instrument) has not increased significantly since initial recognition.

Loss allowances for trade receivables and contract assets are always measured at an amount equal to lifetime ECLs.

4. Material Accounting Policies, Continued

(11) Impairment, continued

1) Impairment of financial assets, continued

The Group assumes that the credit risk on a financial asset has increased significantly if it is more than 30 days past due.

The Group considers a financial asset to be in default when:

- the borrower is unlikely to pay its credit obligations to the Group in full, without recourse by the Group to actions such as realizing security (if any is held); or
- the financial asset is more than 90 days past due.

Credit-impaired financial assets

At each reporting date, the Group assesses whether financial assets carried at amortized cost and debt securities at FVOCI are credit-impaired. A financial asset is 'credit-impaired' when one or more events that have a detrimental impact on the estimated future cash flows of the financial asset have occurred.

Evidence that a financial asset is credit-impaired includes the following observable data:

- significant financial difficulty of the borrower or issuer;
- a breach of contract such as a default or being more than 90 days past due;
- the restructuring of a loan or advance by the Group on terms that the Group would not consider otherwise;
- it is probable that the borrower will enter bankruptcy or other financial restructuring; or
 - the disappearance of an active market for a security because of financial difficulties.
 - 2 Presentation of allowance for ECL in the statement of financial position

Loss allowances for financial assets measured at amortized cost are deducted from the gross carrying amount of the assets.

For debt securities at FVOCI, the loss allowance is charged to profit or loss and is recognized in OCI.

③ Write-off

The gross carrying amount of a financial asset is written off when the Group has no reasonable expectations of recovering a financial asset in its entirety or a portion thereof. The Group expects no significant recovery from the amount written off. However, financial assets that are written off could still be subject to enforcement activities in order to comply with the Group's procedures for recovery of amounts due.

(12) Employee benefits

1) Other long-term employee benefits

The present value of the liability related to other long-term employee benefits is determined by discounting the expected future cash flows using the interest rate of high-quality corporate bonds that have maturity dates approximating the terms of the Group's obligations and that are denominated in the same currency in which the benefits are expected to be paid.

4. Material Accounting Policies, Continued

(12) Employee benefits, Continued

2) Defined benefit plans

The Group's net obligation is calculated annually by an independent actuary using the projected unit credit method.

(13) Provisions

The warranty provision (quality assurance) is recognized when products or services are sold or provided. It is estimated based on past incidence data, calculating all possible outcomes and their associated probabilities.

(14) Revenue from contracts with customers

The main profits of the Group are generated by the energy solution business sector, which sells small batteries, medium and large batteries, and the electronic materials business unit, which sells semiconductor and display materials.

The Group's accounting policies for revenue stream are as follows:

Type of product / service	Nature, timing of satisfaction of performance obligation, significant payment terms					
Sales of Goods	Control is transferred at the time product is delivered to and is taken over by the customer. The group recognizes revenue when control is transferred, and invoices are issued. Under K-IFRS No.1115, revenue is recognized only to the extent that it is highly probable that no significant reduction in cumulative revenue will occur. Since certain customers are eligible for price discounts such as sales incentives based on their purchase volume, revenue is recognized as the amount reflecting those estimated price discounts in accordance with contract terms.					
Royalty	The Group provides customers with licenses, including patented technology, and receives royalties monthly or quarterly, depending on the volume of production (or sales) of products using the technology. Under K-IFRS No.1115, royalty based on sales volume or production is recognized when subsequent sales or production activities occur.					
Development Service	The Group provides services for developing products that meet customer requirements. Intangible outputs generated by such development services are identified as separate performance obligations, and control is transferred to the customer at the time of final approval of the customer. Therefore, costs associated revenue from the contract with the customer are recognized when the deliverables promised to the customer are delivered.					

(15) Government grants

Government grants which are intended to compensate the Group for expenses incurred are recognized as other income (government grants) in profit or loss over the periods in which the Group recognizes the related costs as expenses. If the Group has received government grants whose primary condition is that the Group purchase, construct or otherwise acquire long-term assets, the amounts are deducted in calculating the carrying amount of the asset. The grant is recognized in profit or loss over the life of a depreciable asset as a reduction to depreciation expense.

4. Material Accounting Policies, Continued

(16) Finance income and costs

Finance income comprises interest income on funds invested (including available-for-sale financial assets),

The Group's finance income and finance costs include:

- interest income;
- interest expense;
- the net gain or loss on financial assets at FVTPL;
- the foreign currency gain or loss on financial assets and financial liabilities;
- impairment losses (and reversals) on investments in debt securities carried at amortized cost or FVOCI;
- the net gain or loss on the disposal of financial assets measured at amortized cost;
- hedge ineffectiveness recognized in profit or loss; and
- payment guarantee fee; and

Interest income or expense is recognized using the effective interest method.

(17) Income taxes

The Global Minimum Tax paid in accordance with Pillar 2 rules is the corporate tax subject to the application of Corporate Tax (K-IFRS No. 1012). The Group applies temporary relief from deferred tax accounting treatment due to the impact of the Global Minimum Tax. The Group will account for the current tax when the Pillar 2 corporate tax is incurred.

(18) Operating segment

The Group consists of energy solution segment and electronic materials segment, each being the strategic sales unit of the Group. Strategic sales units are operated separately because each segment is manufacturing different products respectively and requires different technologies and marketing strategies.

The performance of the operating segment is assessed based on profit attributable to owners of the Parent Company of each segment, which is considered to be useful for the management to compare the Group's performance in a specific segment with other companies in the same industry.

4. Material Accounting Policies, Continued

(19) Emissions Rights

The Group accounts for greenhouse gases emission right and the relevant liability as below pursuant to the Act on Allocation and Trading of Greenhouse Gas Emission.

1) Greenhouse Gases Emission Right

Greenhouse Gases Emission Right consists of emission allowances which are allocated from the government free of charge or purchased from the market. Free allocation allowances are measured and recognized at zero and purchased emission permits are recognized at acquisition cost by adding other costs directly related to the acquisition and normally incurred.

Emission rights held for the purpose of performing the obligation is classified as intangible asset and is initially measured at cost and after initial recognition, are carried at cost less accumulated impairment losses. Parts to be submitted to the government within one year from the end of the reporting period are classified as current assets.

Emission rights held for short-swing profits are classified as current asset and are measured at fair value with any changes in fair value recognized as profit or loss in the respective reporting period.

The Group derecognizes an emission right asset when the emission allowance is unusable, disposed or submitted to government in which the future economic benefits are no longer expected to be probable.

2) Emission liability

Emission liabilities are present obligations to submit emission permits to the government and are measured by adding up the carrying amount of the emission permits and the estimated expenditure required to meet the obligations for excess emission. Emission liabilities are derecognized when submitted to the government.

(20) Lease

1) As a lessee

At commencement or on modification of a contract that contains a lease component, the Group allocates the consideration in the contract to each lease component based on its relative stand-alone prices. However, for the leases of property the Group has elected not to separate non-lease components and account for the lease and non-lease components as a single lease component.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted using the interest rate implicit in the lease or, if that rate cannot be readily determined, the Group's incremental borrowing rate.

The Group has elected not to recognize right-of-use assets and lease liabilities for leases of low-value assets and short-term leases. The Group recognize the lease payments associated with these leases as an expense on a straight-line basis over the lease term. The Group presents right-of-use assets that do not meet the definition of investment property in 'property, plant and equipment' and lease liabilities in trade and other payables' in the statement of financial position.

4. Material Accounting Policies, Continued

- (20) Lease, Continued
- 2) As a lessor

When the Group acts as a lessor, it determines at lease inception whether each lease is a finance lease or an operating lease. To classify each lease, the Group makes an overall assessment of whether the lease transfers substantially all the risks and rewards incidental to ownership of the underlying asset. As part of this assessment, the Group considers certain indicators such as whether the lease is for the major part of the economic life of the asset.

(21) New standards and interpretations not yet adopted

The following new standard has been published but is not mandatory for the Group for annual period beginning on January 1, 2023, and the Group has not early adopted them:

- K-IFRS 1001 'Presentation of Financial Statements' - Current/non-current classification of liabilities.

The following new and amended standards are not considered to have any significant impact on the Group:

- Sale and leaseback transactions (K-IFRS No. 1116 'Lease')
- Lack of Exchangeability (K-IFRS No. 1021 'The Effects of Changes in Foreign Exchange Rates')

5. Financial Risk Management

The Group has exposure to the credit risk, liquidity risk and market risk. This note presents information about the Group's exposure to each of the above risks, the Group's objectives, policies, and processes for measuring and managing risk, and the Group's management of capital. Further quantitative disclosures are included throughout these consolidated financial statements.

(1) Credit risk

Credit risk is the risk of financial loss to the Group if a customer or counterparty to a financial instrument fails to meet its contractual obligations. The Group's exposure to credit risk is influenced mainly by the individual characteristics of each customer. Most customers have been transacting with the Group for many years and impairment loss has not occurred very often. In addition, the Group reviews credit rating of new customers prior to the determination of payment terms and also re-examines the credit rating of existing customers on a regular hasis

The Group sets allowances for estimated losses from accounts receivable and financial assets. In addition, the Group reports present conditions and countermeasures of delayed recovery for the financial assets and takes reasonable steps depending on the reasons for delay in order to manage the credit risk. In addition, the Group hedges credit risks by entering into insurance contracts for some financial assets.

1) Exposure to credit risk

The carrying amount of financial assets represents the maximum credit exposure. The Group limits its exposure to credit risk by depositing cash and cash equivalents in financial institutions that have a high credit rate. The maximum exposure to credit risk at the reporting date as of December 31, 2023 and 2022 are summarized as follows:

(In thousands of won)	_	2023	2022
Cash and cash equivalents	₩	1,523,001,371	2,612,660,171
Trade and other receivables, net		3,300,525,044	2,824,178,592
Government bonds		329,030	232,805
Non-derivative financial instruments		550,107,808	483,088,601
Guarantee deposits	_	108,433,754	92,869,643
Total	₩	5,482,397,007	6,013,029,812

5. Financial Risk Management, Continued

(1) Credit risk, continued

2) Impairment loss

The aging of trade and other receivables and respective impaired amounts as of December 31, 2023 and 2022 are as follows:

			2023		2022			
(In thousands of won)	_	Gross	Not-impaired	Impairment	Gross	Not-impaired	Impairment	
Not past due	₩	3,150,695,296	3,150,695,296	-	2,732,455,088	2,732,455,088	-	
Past due 1-30								
days		93,111,042	93,111,042	-	91,736,918	91,700,098	36,820	
Past due 31-60								
days		54,187,841	54,187,841	-	22,058	22,058	-	
Past due over								
61 days	_	2,530,865	2,530,865		1,655	1,348	307	
Total	₩_	3,300,525,044	3,300,525,044		2,824,215,719	2,824,178,592	37,127	

(2) Liquidity risk

Liquidity risk is the risk that the Group will encounter difficulty in meeting the obligations associated with its financial liabilities that are settled by delivering cash or another financial asset. The Group's approach to managing liquidity is to ensure, as far as possible, that it will always have enough liquidity to meet its liabilities when due, under both normal and stressed conditions, without incurring unacceptable losses or risking damage to the Group's reputation.

The Group monitors its cash flows through long-term and short-term management strategies and ensures it has sufficient cash on demand to meet expected operational expenses. This excludes the potential impact of extreme circumstances that cannot reasonably be predicted.

The Group establishes short-term and long-term cash management plans to manage liquidity risk. The Group matches maturity structures of financial assets and liabilities through analyzing and reviewing cash flow budget and actual cash flow. Management believes that the Group can redeem its financial liabilities through operating cash flows and cash inflows of financial assets.

Maturity analysis of financial liabilities as of December 31, 2023 is as follows:

(In thousands of won)			Combinatival		More than 1 year and less than	Name than 5
		Carrying amount	Contractual Cash flow	1 Year or less	5 years	More than 5 years
Trade and other payable (*)	₩	4,639,646,030	4,673,527,636	4,098,308,261	555,707,306	19,512,069
Short-term borrowings		2,868,274,952	2,891,483,090	2,891,483,090	-	-
Long-term borrowings		2,849,524,920	3,144,774,094	124,735,225	3,020,038,869	-
Total	₩	10,357,445,902	10,709,784,820	7,114,526,576	3,575,746,175	19,512,069

^(*) Trade and other payable includes cash flows related to lease liabilities. More details are included in Note 31 Lease.

5. Financial Risk Management, Continued

(3) Market risk

Market risk is the risk that changes in market prices, such as foreign exchange rates, interest rates and equity prices will affect the value of its holdings of financial instruments or risk of fluctuations in cash flows. The objective of market risk management is to manage and control market risk exposures within acceptable parameters, while optimizing the return.

1) Exchange rate risk

The Group has exposure to the exchange rate risk for the sale, purchase, and borrowing of currencies not denominated in functional currency. Main currencies used for these transactions are USD, EUR and etc. The Group continuously monitors changes in future exchange rates and manages them to minimize the impact of foreign exchange risk on the Group.

Carrying amounts of monetary assets and liabilities expressed as other than functional currency as of December 31, 2023 and 2022 are as follows:

(In thousands of won)		Financial a	assets	Financial liabilities		
		2023	2022	2023	2022	
Currency						
USD	₩	4,463,088,496	5,122,251,285	4,431,197,780	5,079,489,325	
EUR		77,228,589	321,095,099	64,824,267	223,497,365	
etc.		368,801,920	310,992,927	521,102,756	365,614,866	

^(*) The amounts of assets and liabilities by currency are the figures before internal transactions are eliminated.

The following exchange rates were applied during the years ended December 31, 2023 and 2022:

(In won)		Average	rate	Reporting date spot rate		
Currency	_	2023	2022	2023	2022	
USD	₩	1,306.12	1,291.15	1,289.40	1,267.30	
EUR		1,412.67	1,357.35	1,426.59	1,351.20	

Effects on income (loss) after income taxes as a result of change in exchange rate as of December 31, 2023 and 2022 are as follows:

(In thousands of won)		20	23	2022	
Currency	·	If increased by 5%	If decreased by 5%	If increased by 5%	If decreased by 5%
USD	₩	1,173,578	(1,173,578)	1,573,640	(1,573,640)
EUR		456,479	(456,479)	3,591,597	(3,591,597)
etc.		(5,604,671)	5,604,671	(2,010,087)	2,010,087

5. Financial Risk Management, Continued

- (3) Market risk, continued
- 2) Interest rate risk
- (i) The interest rate profile of the Group's interest-bearing financial instruments as of December 31, 2023 and 2022 are summarized as follows:

(In thousands of won)		2023	2022
Fixed interest rate:			
Assets Short-term&Long-term Financial Assets	₩	550,107,808	483,088,601
Sub-total		550,107,808	483,088,601
Liabilities			
Short-term borrowings	₩	1,183,024,326	1,472,578,128
Long-term borrowings		213,988,500	405,360,000
Sub-total		1,397,012,826	1,877,938,128
Variable interest rate:			
Liabilities			
Short-term borrowings	₩	1,685,250,626	1,378,605,086
Long-term borrowings		2,635,536,420	1,891,680,000
Sub-total		4,320,787,046	3,270,285,086

(ii) Cash flow sensitivity analysis for variable rate instruments

Under assumption that all other variables remain constant, change of one percent point in interest rate would have increased (decreased) income after income taxes by the amounts shown below as of December 31, 2023 and 2022.

(In thousands of won)		202	23	2022		
	_	If increased	If decreased	If increased	If decreased	
	_	by 1%	by 1%	by 1%	by 1%	
Variable rate instruments	₩	(31,800,993)	31,800,993	(24,069,298)	24,069,298	

5. Financial Risk Management, Continued

(3) Market risk, continued

3) Other market price risk

Market price risk arises from the equity instruments at fair value that the Group possesses. Major investments within the portfolio are managed separately and the approval of the Board of Directors is necessary for significant acquisition or disposal decisions.

The effect on net assets when the price of listed equity financial assets that the Group possesses changed by five percent points as of December 31, 2023 is as follows:

(In thousands of won)			202	3
		_	If increased by 5%	If decreased by 5%
	Impact on net assets	₩	43,933,111	(43,933,111)

(4) Capital management

The Group's capital management is to maintain a sound capital structure and to maximize shareholders' profit. The Group uses financial ratios such as debt ratio and net borrowings ratio as a capital management indicator to achieve the optimum capital structure. Debt to equity ratio is calculated as total debt divided by total equity and net borrowings to equity ratio is calculated as net borrowings divided by total equity.

(In thousands of won)		2023	2022
Debt to equity ratio:			
Total liabilities	₩	14,131,610,215	13,040,023,015
Total equity		19,907,249,978	17,217,502,156
Debt to equity ratio		70.99%	75.74%
Net borrowings to equity ratio:			
Borrowings	₩	5,717,799,872	5,148,223,214
Less : Cash and cash equivalents		(1,524,461,361)	(2,614,271,850)
Less : Short-term financial instruments		(550,068,407)	(483,069,101)
Net borrowings	₩	3,643,270,104	2,050,882,263
Net borrowings to equity ratio		18.30%	11.91%

5. Financial Risk Management, Continued

(5) Fair values

1) Fair value versus carrying amounts

The fair values of financial assets and liabilities, together with the carrying amounts shown in the statement of financial position, as of December 31, 2023 and 2022 are summarized as follows:

(In thousands of won)		2023	3	2022		
		Carrying amount	Fair value	Carrying amount	Fair value	
Financial assets:						
Assets carried at fair value						
Equity Instruments	₩	1,307,409,902	1,307,409,902	1,204,354,393	1,204,354,393	
Derivative financial assets		7,031,294	7,031,294	34,707,824	34,707,824	
Subtotal		1,314,441,196	1,314,441,196	1,239,062,217	1,239,062,217	
Assets carried at amortized cost						
Cash and cash equivalents		1,524,461,361	(*1)	2,614,271,850	(*1)	
Trade receivables and other receivables		3,300,525,044	(*1)	2,824,178,592	(*1)	
Government bonds		329,030	(*1)	232,805	(*1)	
Financial instruments		550,107,808	(*1)	483,088,601	(*1)	
Guarantee deposits		108,433,754	(*1)	92,869,643	(*1)	
Subtotal		5,483,856,997		6,014,641,491		
Total financial assets	₩	6,798,298,193		7,253,703,708		
Financial liabilities:						
Liabilities carried at fair value						
Derivative financial liabilities	₩	<u> </u>		139,830	139,830	
Liabilities carried at amortized cost						
Borrowings	₩	5,717,799,872	(*1)	5,148,223,214	(*1)	
Trade and other payables (*2)		4,639,646,030	(*1)	4,535,542,047	(*1)	
Subtotal		10,357,445,902		9,683,765,261		
Total financial liabilities	₩	10,357,445,902		9,683,905,091		

^(*1) Book value is a reasonable approximation of fair value, so it has been excluded from the fair value disclosure.

^(*2) Including lease liabilities

5. Financial Risk Management, Continued

- (5) Fair values, continued
- 2) Fair value hierarchy

The Group classifies consolidated financial instruments carried at fair value in the statement of financial position according to fair value hierarchy which reflects significance of input variables used. The different levels of fair value hierarchy have been defined as follows:

"Level 1" indicates quoted prices in active markets for identical assets or liabilities. Instruments included in "Level 1" are mostly composed of listed equity securities that are classified as FVOCI financial assets.

The Group uses a valuation technique to estimate fair values of financial instruments which are not traded in an active market. If the significant inputs which are required for a fair value measurement are observable directly or indirectly in a market, the fair value input is classed as "Level 2". The Group trades derivatives such as currency forwards and commodity futures and measures the fair value of the derivatives using changes in prices that are directly or indirectly observable in the market. The Group includes the fair value of these derivatives as "Level 2".

On the other hand, if the significant inputs are not based on observable market data, the fair value input for that instrument is classed as "Level 3".

Among unlisted equity securities, the fair values of Samsung Venture Investment Corporation, iMarket Asia, and the Korea Economic Daily Co., Ltd are calculated using discounted cash flow model within the income approach method. Other evaluated equity securities were valued based on fair value calculated using the per-share evaluated amount determined by the net asset value method. These unlisted equity securities are classed as "Level 3".

The valuation techniques used in measuring Level 3 fair value, as well as the significant unobservable inputs used are as follows:

	Valuation techniques	Significant unobservable inputs	Inter-relationship between key unobservable inputs and fair value measurement
Financial assets at FVPL	Discounted cash flow method, Net asset method	Discount rate, Perpetual growth rate, Net asset	The estimated fair value would increases(decreases) if the discount rates were lower(higher), perpetual rates were higher(lower), and net asset value were higher(lower).

5. Financial Risk Management, Continued

(5) Fair values, continued

The fair values of financial instruments based on the fair value hierarchy as of December 31, 2023 and 2022 are summarized as follows:

(In thousands of won)	_	Level 1	Level 2	Level 3	Total
December 31, 2023:					
Financial assets					
Equity instruments	₩	1,193,834,547	-	113,575,355	1,307,409,902
Derivative assets		-	7,031,294	-	7,031,294
December 31, 2022:					
Financial assets					
Equity Instruments	₩	1,093,132,877	-	111,221,516	1,204,354,393
Derivative assets		-	34,707,824	-	34,707,824
Financial liabilities					
Derivative liabilities		-	139,830	-	139,830

(6) Transfer of financial assets and others

The Group received cash and transferred trade receivables to financial institutions. As the Group continues to retain substantially all the risks and rewards of ownership, the trade receivables have not been derecognized from the statement of financial position. The amount received at the time of transfer was recognized as short-term borrowings. Financial assets transferred but not derecognized as of December 31, 2023 and 2022, are as follows:

(In thousands of won)				
		2023	2022	
Carrying amount of assets	₩	1,183,024,326	1,252,676,717	
Carrying amount of associated liabilities		1,183,024,326	1,252,676,717	

6. Segments Information

- (1) Operating segments
- 1) The main businesses by segment are as follows:

Segment	Main business	
Energy solutions	Manufacturing and sales of secondary batteries such as automotive batteries.	
Electronic material	Manufacturing and sales of semi-conductor and display materials	

2) The operating segments of the consolidated group are decided by management, which is established for strategic decision making. Management reviews the operating income for each operating segment in order to allocate resources to each segment and assess the segments' performance. Sales consist mostly of sales of goods. The following table provides information for each reportable segment for the years ended December 31, 2023 and 2022. 2023

(In thousands of won)		Energy solutions	Electronic material	Total
Revenues	₩	20,406,099,943	2,302,200,556	22,708,300,499
Depreciation		1,584,571,667	75,086,049	1,659,657,716
Amortization	_	61,601,714	6,712,346	68,314,060
Operating profit	₩	1,342,418,303	290,950,662	1,633,368,965
2022			Floatussia	
(In thousands of won)	_	Energy solutions	Electronic material	Total
Revenues	₩	17,566,241,978	2,557,827,538	20,124,069,516
Depreciation		1,313,658,924	94,441,455	1,408,100,379
Amortization	_	49,053,277	6,179,599	55,232,876
Operating profit	₩	1,253,824,677	554,188,336	1,808,013,013

Total assets and total liabilities of each segment are not presented separately since the information is not provided to the management on a regular basis.

3) As of December 31, 2023, contract liabilities resulting from contracts with customers amounted to \$\psi\$ 671,987million, and among the contract liabilities for the year ended December 31, 2022, the amount recognized as revenue in the year ended December 31, 2022 was \$\psi\$ 174,609million.

6. Segments Information, Continued

(2) Geographical information

The Group operates in global markets such as Republic of Korea (the Parent Company's domicile), North America, Europe, China, Southeast Asia, and so on. The following table provides revenue and major non-current assets for each geographical region as of and for the years ended December 31, 2023 and 2022.

		2023		2022		
(In thousands of won)		Revenue(*1)	Non-current Assets(*2)	Revenue(*1)	Non- current Assets(*2)	
Korea	₩	1,102,541,603	3,378,634,700	1,172,464,784	2,963,135,659	
North America		5,503,157,438	1,566,015,880	4,814,339,872	278,019,037	
Europe		10,760,536,569	5,472,522,711	8,456,642,422	4,968,470,511	
China		2,325,870,781	1,575,870,569	2,661,620,010	1,840,598,259	
South-eastern Asia and etc.		3,016,194,108	1,458,681,301	3,019,002,428	598,394,076	
Consolidation adjustments			(552,126,851)	-	(720,657,714)	
Total	₩	22,708,300,499	12,899,598,310	20,124,069,516	9,927,959,828	

^(*1) The external customer accounting for more than 10% of the group's sales is a single customer related to the European automotive battery sector, and the sales from the customer during the period is $\mbox{$W$}3,763,868$ million(prior period: $\mbox{$W$}2,936,140$ million).

7. Cash and Cash Equivalents

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

(In thousands of won)		2023	2022	
Cash on hand	₩	1,459,990	1,611,679	
Demand deposits		1,334,800,678	1,442,661,935	
Short-term investments		188,200,693	1,169,998,236	
Total	₩	1,524,461,361	2,614,271,850	

^(*2) Non-current assets include carrying amount of property, plant and equipment, intangible assets and investment property.

8. Trade and Other Receivables

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

(In thousands of won)		202	23	2022		
	-	Current	Non- current	Current	Non- current	
Loans	₩	133,876	37,359,064	4,411,368	6,854,298	
Present value discount Other account		-	(3,639,227)	-	(4,049)	
receivables		172,920,677	19,382	289,836,029	29,074	
Accrued income		97,475,998	-	10,091,932	-	
VAT receivables Trade account		136,083,230	-	116,515,530	-	
receivable (Receivables) Trade account receivable		2,874,926,035	-	2,419,225,985	-	
(Contract Assets)		121,329,239	-	93,771,082	-	
Allowance	-			(37,127)		
Total	₩	3,402,869,055	33,739,219	2,933,814,799	6,879,323	

(2) Changes in allowance for trade and other receivables for the years ended December 31, 2023 and 2022 are summarized as follows:

(In thousands of won)	_	2023	2022
Balance at beginning	₩	37,127	129,975
Reversal of Bad debt expense		(38,377)	(90,503)
Exchange rate fluctuation	_	1,250	(2,345)
Balance at ending	₩	-	37,127

9. Inventories

(1) Inventories as of December 31, 2023 and 2022 are summarized as follows:

(In thousands of won)	_	Acquisition cost	Allowance for valuation	Book value
Finished goods	₩	451,997,208	(15,931,923)	436,065,285
Semi-finished goods		1,320,012,128	(24,372,043)	1,295,640,085
Raw materials		918,929,489	(16,774,947)	902,154,542
Supplies		55,460,505	-	55,460,505
Materials-in-transit		608,048,513	<u> </u>	608,048,513
Total	₩	3,354,447,843	(57,078,913)	3,297,368,930

9. Inventories, Continued

(1) Inventories as of December 31, 2023 and 2022 are summarized as follows, continued:

2) 2022

(In thousands of won)	_	Acquisition cost	Allowance for valuation	Book value
Finished goods	₩	373,378,560	(16,379,688)	356,998,872
Semi-finished goods		1,248,028,764	(30,172,256)	1,217,856,508
Raw materials		1,001,839,614	(27,312,516)	974,527,098
Supplies		55,584,671	-	55,584,671
Materials-in-transit	_	599,548,686	<u> </u>	599,548,686
Total	W	3,278,380,295	(73,864,460)	3,204,515,835

(2) The amount of inventories expensed as cost of sales and loss on valuation of inventories for the years ended December 31, 2023 and 2022 are as follows:

(In thousands of won)		2023	2022
Inventories recognized as cost of sales	₩	18,743,515,101	15,893,496,809
Reversal of valuation of inventories		(17,131,010)	9,826,025
Total	₩	18,726,384,091	15,903,322,834

10. Other Investments

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

(In thousands of won)	_		2023			2022			
	_	Current	Non-current	Total	Current	Non-current	Total		
Government bonds	₩	59,450	269,580	329,030	31,560	201,245	232,805		
Equity instruments		-	1,307,409,902	1,307,409,902	-	1,204,354,393	1,204,354,393		
Financial instruments		550,068,407	39,401	550,107,808	483,069,101	19,500	483,088,601		
Guarantee deposits	_	51,970,644	56,463,110	108,433,754	51,561,444	41,308,199	92,869,643		
Total	₩	602,098,501	1,364,181,993	1,966,280,494	534,662,105	1,245,883,337	1,780,545,442		

10. Other Investments, Continued

(2) Available-for-sale financial assets as of December 31, 2023 and 2022 are summarized as follows:

(In thousands of won)		Acquisition cost	Beginning balance	Changes in unrealized gain or loss	Ending balance	Carrying amount
2023						
FVOCI						
Listed equity instruments Unlisted equity	₩	703,754,183	236,023,295	88,136,823	324,160,118	1,027,914,301
instruments		18,653,588	50,672,767	526,273	51,199,040	69,852,628
FVTPL						
Listed equity instruments Unlisted equity	₩	39,799,977	113,555,422	12,564,847	126,120,269	165,920,246
instruments		16,220,244	28,669,916	(1,167,433)	27,502,483	43,722,727
Total	₩	778,427,992	428,921,400	100,060,510	528,981,910	1,307,409,902
2022						
FVOCI						
Listed equity instruments Unlisted equity	₩	703,754,183	377,994,346	(141,971,051)	236,023,295	939,777,478
instruments		18,658,588	34,428,502	16,244,265	50,672,767	69,331,355
FVTPL						
Listed equity instruments Unlisted equity	₩	39,799,982	85,096,266	28,459,151	113,555,417	153,355,399
instruments		16,041,663	31,470,852	(5,622,354)	25,848,498	41,890,161
Total	₩	778,254,416	528,989,966	(102,889,989)	426,099,977	1,204,354,393

The corporate tax effect deducted from equity due to cumulative valuation gain(loss) arising from other comprehensive income securities amounted to $\mbox{$\Psi$}$ 99,095 million at the end of the current period and $\mbox{$\Psi$}$ 75,688 million at the end of the previous period.

11. Other Current Assets and Non-current Assets

Other current and non-current assets as of December 31, 2023 and 2022 are summarized as follows:

(In thousands of won)		202	3	2022		
		Current	Non-current	Current	Non-current	
Advance payments	₩	177,169,254	14,574,430	167,439,358	18,000,640	
Prepaid expenses		154,742,623	78,606,049	152,050,078	119,714,371	
Prepaid income tax		21,288,175		16,310,966		
Total	₩	353,200,052	93,180,479	335,800,402	137,715,011	

12. Investments in Associates

(1) The equity-method accounted investees of the Group as of December 31, 2023 and 2022 are summarized as follows:

(In thousands of won)				20	023	20	22
Associates:	Country	Date of financial statements	Primary business	Percentage of ownership	Carrying amount	Percentage of ownership	Carrying amount
Samsung Display Ltd.("SDC") (*1)	Korea	December 31	Manufacturing and sale of OLED	15.2%	9,707,290,928	15.2%	8,760,865,210
Samsung Global Research Co., Ltd.("SERI")	Korea	December 31	Management advisory consulting	29.6%	23,826,882	29.6%	23,964,873
Intellectual Keystone Technology ("IKT")	U.S.A	December 31	Investing in new technology	41.0%	8,681,627	41.0%	9,137,212
SD Flex Co., Ltd.	Korea	December 31	Manufacturing printed-circuit board	50.0%	10,274,181	50.0%	12,982,344
ECOPRO EM Co., Ltd. (*2)	Korea	December 31	Anode material manufacturing	40.0%	223,696,155	40.0%	125,156,333
Philenergy Co., Ltd. (*3)	Korea	December 31	Stack Equipment	14.1%	17,114,008	20.0%	5,506,831
Secondary Battery Growth Fund (*4)	Korea	December 31	Investing in secondary battery R&D	33.3%	5,349,652	33.3%	2,669,452
	Tota	al		₩	9,996,233,433	W	8,940,282,255

^(*1) Although the Group owns less than 20% of its shares and voting rights, the Group has classified the shares equity-accounted investees due to the fact that the Group has representations in the board of directors of SDC.

^(*2) During the current period, the Group made an additional investment of \$\times\$ 40,000 million to ECOPRO EM.

^(*3) During the current period, the Group's equity securities of Philenergy Co., Ltd. held by the Group were decreased from 20% to 14.1% due to the increase in the number of shares outstanding due to the third-party paid-in capital increase and the conversion of third-party convertible bonds. Although the Group owns less than 20% of its shares and voting rights, the Group has classified the shares equity-accounted investees due to the fact that the Group has representations in the board of directors of Philenergy.

^(*4) During the current period, the Group made an additional investment of \upmu 2,680 million to Secondary Battery Growth Fund.

12. Investments in Associates, Continued

(2) The summarized financial information of equity-accounted investees as of and for the years ended December 31, 2023 and 2022 are summarized as follows:

(In thousands of won)		SDC	SERI	IKT	SDFLEX
Current assets	₩	24,721,410,294	118,952,880	21,087,063	13,505,167
Non-current assets		46,413,723,496	66,501,823	88,896	8,474,099
Current liabilities		5,821,884,881	87,546,036	1,258	1,421,722
Non-current liabilities		1,485,249,760	17,412,446	-	9,183
Revenue		30,950,579,238	219,537,369	-	13,843,866
Operating profit (loss)		5,501,751,056	(219,077)	(1,519,265)	(1,739,215)
Net income (loss)		6,331,238,839	157,998	(1,519,265)	(1,396,025)
Other comprehensive income (loss)		(108,690,007)	(852,741)	-	-
Total comprehensive income (loss)		6,222,548,832	(694,743)	(1,519,265)	(1,396,025)
Dividends received from associates		-	-	-	2,000,000

(In thousands of won)		ECOPROEM	Philenergy	Secondary Battery Growth Fund.
Current assets	₩	1,304,244,823	198,630,575	608,297
Non-current assets		574,964,988	56,071,659	15,443,401
Current liabilities		1,183,597,858	115,001,826	2,743
Non-current liabilities		126,345,610	10,125,509	-
Revenue		3,771,340,006	196,717,748	39,730
Operating profit (loss)		225,225,576	15,594,145	599
Net income (loss)		159,477,241	(4,672,387)	599
Other comprehensive income (loss)		-	-	-
Total comprehensive income (loss)		159,477,241	(4,672,387)	599
Dividends received from associates		-	-	-

12. Investments in Associates, Continued

(In thousands of won)		SDC	SERI	IKT	SDFLEX
Current assets	₩	42,082,412,387	113,024,754	21,114,966	21,422,255
Non-current assets		23,070,657,947	65,781,408	1,170,704	6,616,255
Current liabilities		6,294,310,360	82,723,644	-	2,052,247
Non-current liabilities		1,220,097,025	15,120,109	-	21,576
Revenue		34,298,283,448	228,696,932	-	20,495,032
Operating profit (loss)		5,883,246,706	2,351,801	(6,994,635)	3,752,772
Net income (loss)		6,614,496,361	241,375	(6,994,635)	3,345,275
Other comprehensive income (loss)		(67,942,352)	(7,638,018)	-	-
Total comprehensive income (loss)		6,546,554,009	(7,396,643)	(6,994,635)	3,345,275
Dividends received from associates		-	-	-	2,000,000

(In thousands of won)		ECOPROEM	Philenergy	Secondary Battery Growth Fund.
Current assets	₩	728,334,706	119,823,834	1,401,999
Non-current assets		435,237,418	20,488,863	6,608,947
Current liabilities		651,423,402	79,042,153	2,590
Non-current liabilities		199,358,922	36,576,586	-
Revenue		2,005,446,165	189,709,754	21,950
Operating profit (loss)		125,212,107	16,842,728	(29,818)
Net income (loss)		101,703,395	3,768,226	(29,818)
Other comprehensive income (loss)		-	-	-
Total comprehensive income (loss)		101,703,395	3,768,226	(29,818)
Dividends received from associates		-	-	-

12. Investments in Associates, Continued

(3) The comparison between carrying amount of the investments and the investees' net assets based on the Group's percentage of ownership as of December 31, 2023 and 2022 are summarized as follows:

1) 2023

(In thousands of won)	_	SDC	SERI	IKT	SDFLEX
Net assets(a)(*)	₩	63,863,756,108	80,496,221	21,174,701	20,548,361
Percentage of ownership(b)		15.2%	29.6%	41.0%	50.0%
Equity to net assets(axb)		9,707,290,928	23,826,882	8,681,627	10,274,181
Difference of Investments		-	-	-	-
Carrying amount	₩	9,707,290,928	23,826,882	8,681,627	10,274,181

(In thousands of won)		ECOPROEM	Philenergy	Secondary Battery Growth Fund.
Net assets(a)(*)	₩	559,240,388	112,212,599	16,065,020
Percentage of ownership(b)		40.0%	14.1%	33.3%
Equity to net assets(axb)		223,696,155	15,821,977	5,349,652
Difference of Investments		<u>-</u>	1,292,031	
Carrying amount	₩	223,696,155	17,114,008	5,349,652

^(*) Net assets are the net assets of associates minus non-controlling interests.

(In thousands of won)		SDC	SERI	IKT	SDFLEX
Net assets(a)(*)	₩	57,637,271,122	80,962,410	22,285,881	25,964,688
Percentage of ownership(b)		15.2%	29.6%	41.0%	50.0%
Equity to net assets(axb)		8,760,865,210	23,964,873	9,137,212	12,982,344
Difference of Investments		-	-	-	-
Carrying amount	W	8,760,865,210	23,964,873	9,137,212	12,982,344

(In thousands of won)	_	ECOPROEM	Philenergy	Secondary Battery Growth Fund.
Net assets(a)(*)	₩	312,890,831	18,399,974	8,016,372
Percentage of ownership(b)	_	40.0%	20.0%	33.3%
Equity to net assets(axb)		125,156,333	3,679,994	2,669,452
Difference of Investments	_	<u>-</u>	1,826,837	
Carrying amount	₩	125,156,333	5,506,831	2,669,452

^(*) Net assets are the net assets of associates minus non-controlling interests.

12. Investments in Associates, Continued

(4) Changes in investments in equity-accounted investees for the years ended December 31, 2023 and 2022 are as follows:

1) 2023

(In thousands of won)

Company	ŕ	January 1, 2023	Acquisition	Share of profits(loss)	Other capital movements	Gain (Loss) on disposal of equity method investment	Removal of Dividends	December 31, 2023
SDC	₩	8,760,865,210	-	962,805,669	(16,379,951)	-	-	9,707,290,928
SERI		23,964,873	-	60,328	(198,319)	-	-	23,826,882
IKT		9,137,212	-	(622,899)	167,314	-	-	8,681,627
SDFLEX		12,982,344	-	(708,163)	-	-	(2,000,000)	10,274,181
ECOPROEM		125,156,333	40,000,000	58,716,930	(177,108)	-	-	223,696,155
Philenergy		5,506,831	-	(3,013,630)	(99,692)	14,720,499	-	17,114,008
Secondary Battery Growth Fund		2,669,452	2,680,000	200	-	-	-	5,349,652
Total	₩	8,940,282,255	42,680,000	1,017,238,435	(16,687,756)	14,720,499	(2,000,000)	9,996,233,433

2) 2022

(In thousands of won)

				Share of	Other capital	Gain (Loss) on disposal of equity method	Removal of	December 31,
Company		January 1, 2022	Acquisition	profits(loss)	movements	investment	Dividends	2022
SDC	₩	7,765,314,543	-	1,005,587,406	(10,036,739)	-	-	8,760,865,210
SERI		26,146,557	-	79,169	(2,260,853)	-	-	23,964,873
IKT		11,180,577	-	(2,867,800)	824,435	-	-	9,137,212
SEST		19,533,878	-	(6,296,889)	1,996,518	(15,233,507)	-	-
SDFLEX		13,306,754	-	1,675,590	-	-	(2,000,000)	12,982,344
ECOPROEM		44,457,379	40,000,000	40,929,961	(231,007)	-	-	125,156,333
Philenergy Secondary		4,814,612	-	599,781	92,438	-	-	5,506,831
Battery Growth Fund		670,000	2,010,000	(10,548)			-	2,669,452
Total	W	7,885,424,300	42,010,000	1,039,696,670	(9,615,208)	(15,233,507)	(2,000,000)	8,940,282,255

(5) No significant restriction exists on the equity-accounted investees' ability to transfer money in the form of cash dividends or to repay or return borrowings or advances to the Group. In addition, no contingent liabilities related to interests in associates has been identified.

13. Property, Plant and Equipment

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

(1) 2023

(In thousands of won)

				Tools,			
	Land	Buildings and structures	Machinery	furnitures and fixtures	Right of use assets	Construction in progress	Total
Beginning balance +	v 352,595,992	2,517,208,381	3,175,710,345	238,451,007	69,188,026	2,612,316,048	8,965,469,799
Acquisition cost Accumulated depreciation (including impairment and government grants) Acquisitions and capital	352,595,992 -	4,621,115,978 (2,103,907,597)	7,830,524,099 (4,654,813,754)	884,204,089 (645,753,082)	99,237,957 (30,049,931)	2,612,316,048 -	16,399,994,163 (7,434,524,364)
expenditure	86,732	11,301,494	12,839,358	59,645,675	40,728,597	4,038,623,128	4,163,224,984
Depreciation	-	(242,572,234)	(1,231,728,364)	(155,705,556)	(29,465,937)	-	(1,659,472,091)
Disposals	(416,511)	(244,883)	(21,898,489)	(1,411,091)	(1,229,200)	(5,031,542)	(30,231,716)
Impairment losses	-	-	(1,129,678)	(583,765)	-	-	(1,713,443)
Other	12,031,642	1,489,945,139	1,845,616,938	155,162,870	(2,346,071)	(3,044,339,974)	456,070,544
Ending balance	¥ 364,297,855	3,775,637,897	3,779,410,110	295,559,140	76,875,415	3,601,567,660	11,893,348,077
Acquisition cost Accumulated depreciation (including impairment and government grants)	364,297,855 -	6,172,415,609 (2,396,777,712)	9,685,199,157 (5,905,789,047)	1,050,142,683 (754,583,543)	130,130,696 (53,255,281)	3,601,567,660 -	21,003,753,660 (9,110,405,583)

Other amounts include reclassification of construction-in-progress to appropriate accounts such as investment property, property, plant and equipment, and expense accounts. Also, they include exchange rate fluctuation and changes in government grants.

13. Property, Plant and Equipment, Continued

(2) 2022

(In thousands of won)

				Tools,			
	Land	Buildings and structures	Machinery	furnitures and fixtures	Right-of-use assets	Construction in progress	Total
Beginning balance w	345,320,013	2,137,880,321	2,778,631,970	196,380,942	35,235,220	2,142,547,123	7,635,995,589
Acquisition cost Accumulated depreciation (including impairment and government grants) Acquisitions and capital	345,320,013	4,076,457,298 (1,938,576,977)	6,655,250,486 (3,876,618,516)	790,459,938 (594,078,996)	83,079,072 (47,843,852)	2,142,547,123 -	14,093,113,930 (6,457,118,341)
expenditure	32,418	9,521,205	39,322,934	46,112,588	64,185,474	2,543,530,776	2,702,705,395
Depreciation	-	(160,258,777)	(1,085,544,173)	(136,735,623)	(25,375,751)	-	(1,407,914,324)
Disposals	(19,605)	(5,515,413)	(100,130,393)	(5,284,074)	(1,288,492)	(4,904,215)	(117,142,192)
Impairment losses	-	-	(25,886,445)	(4,135,486)	-	(1,063,595)	(31,085,526)
Other	7,263,166	535,581,045	1,569,316,452	142,112,660	(3,568,425)	(2,067,794,041)	182,910,857
Ending balance w	352,595,992	2,517,208,381	3,175,710,345	238,451,007	69,188,026	2,612,316,048	8,965,469,799
Acquisition cost Accumulated depreciation (including impairment and government grants)	352,595,992	4,621,115,978 (2,103,907,597)	7,830,524,099 (4,654,813,754)	884,204,089 (645,753,082)	99,237,957 (30,049,931)	2,612,316,048	16,399,994,163 (7,434,524,364)

Other amounts include reclassification of construction-in-progress to appropriate accounts such as investment property, property, plant and equipment, and expense accounts. Also, they include exchange rate fluctuation and changes in government grants.

14. Intangible Assets

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

(1) 2023

		Industrial	Development			
(In thousands of won)	_	property	costs	Others	Goodwill	Total
Beginning balance	₩	62,068,072	-	142,827,839	610,035,252	814,931,163
Acquisition cost Accumulated amortization		171,556,792	6,331,931	971,294,760	639,358,233	1,788,541,716
and impairment		(109,488,720)	(6,331,931)	(828,466,921)	(29,322,981)	(973,610,553)
Acquisitions		2,361,356	-	10,170,519	-	12,531,875
Amortization		(10,933,221)	-	(57,380,839)	-	(68,314,060)
Disposals		(1,223,341)	-	(19,438)	-	(1,242,779)
Impairment losses		-	-	(2,045,303)	-	(2,045,303)
Other	_	10,527,760	<u> </u>	86,422,938	6,118,153	103,068,851
Ending balance	₩	62,800,626		179,975,716	616,153,405	858,929,747
Acquisition cost Accumulated amortization and impairment		183,222,567 (120,421,941)	-	1,067,868,779 (887,893,063)	645,476,386 (29,322,981)	1,896,567,732 (1,037,637,985)

Other amounts include reclassification of long-term prepaid expenses to industrial property rights and of construction-in-progress to other intangible assets. Also, they include the changes incurred due to exchange rate fluctuation.

14. Intangible Assets, Continued

(2)2022

(In thousands of won)	-	Industrial property	Development costs	Others	Goodwill	Total
Beginning balance	₩	63,471,064	-	126,123,771	609,316,233	798,911,068
Acquisition cost Accumulated amortization and impairment		161,516,938 (98,045,874)	6,331,931 (6,331,931)	910,797,533 (784,673,762)	638,639,214 (29,322,981)	1,717,285,616 (918,374,548)
Acquisitions		1,987,067	-	2,596,799	-	4,583,866
Amortization		(11,442,845)	-	(43,790,031)	-	(55,232,876)
Disposals		(313,604)	-	(1,126,850)	-	(1,440,454)
Impairment losses		-	-	(3,128)	-	(3,128)
Other	_	8,366,390		59,027,278	719,019	68,112,687
Ending balance	₩	62,068,072		142,827,839	610,035,252	814,931,163
Acquisition cost Accumulated amortization and impairment		171,556,792 (109,488,720)	6,331,931 (6,331,931)	971,294,760 (828,466,921)	639,358,233 (29,322,981)	1,788,541,716 (973,610,553)

Other amounts include reclassification of long-term prepaid expenses to industrial property rights and of construction-in-progress to other intangible assets. Also, they include the changes incurred due to exchange rate fluctuation.

(3) Amortization expenses

Amortization expenses are classified as manufacturing cost and selling, general and administrative expenses, and the Group recognizes the manufacturing cost as cost of sales when the inventory is sold.

(4) Research and development expenses

Research and development expenses recognized as selling, general and administrative expenses for the years ended December 31, 2023 and 2022 are \(\psi\) 1,136,361 million and \(\psi\) 1,076,353 million, respectively.

(5) Impairment of CGU including goodwill

The Group performed impairment test on the goodwill allocated to electronic material business, and Novaled, a cash generating unit ("CGU") respectively.

The Group estimated recoverable amount of electronic material business and Novaled, based on its projections on 5 years' cash flow of each CGU, under assumption of terminal growth rate at 1% for both CGUs, and discount rate of 10.95% and 10.55% for electronic material business and Novaled, respectively. Fair value measurements are classified as Level 3 based on the inputs used in the valuation techniques. The Group did not recognize impairment losses for the electronic material business and Novaled as the estimated value in use exceeded its carrying amount of the cash-generating unit.

As of December 31, 2023, the Group has allocated $\mbox{$\psi$}$ 498,275 million of its goodwill to its electronic material business, and $\mbox{$\psi$}$ 117,878 million to Novaled.

15. Investment Property

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

(In thousands of won)	_		2023			2022	
	_	Land	Buildings	Total	Land	Buildings	Total
Beginning balance	₩	144,721,618	2,837,248	147,558,866	144,786,443	5,623,734	150,410,177
Reclassification		-	(52,755)	(52,755)	(64,825)	(2,600,431)	(2,665,256)
Depreciation	_	<u> </u>	(185,625)	(185,625)		(186,055)	(186,055)
Ending balance	₩_	144,721,618	2,598,868	147,320,486	144,721,618	2,837,248	147,558,866

As of December 31, 2023 and 2022 investment property consists of land and buildings that are leased to Samsung Electronics Co., Ltd. and etc. The rental income from investment property for the years ended December 31, 2023 and 2022 are \(\psi 4,591\) million and \(\psi 4,308\) million, respectively.

The fair value of the investment property is determined based on the value measured by an independent appraiser with experience and professional qualifications that has recently evaluated similar properties in the region in which the investment property to be assessed is located. The fair value of investment real estate of ₩ 445,701 million was classified as Level 3 fair value based on the inputs used in the valuation technique.

16. Trade Payables and Other Liabilities

Trade payables and other liabilities as of December 31, 2023 and 2022 are summarized as follows:

(In thousands of won)	_	20	2023 2022		
	_	Current	Non-current	Current	Non-current
Trade payables	₩	2,118,657,669	-	2,191,529,679	-
Accounts payable		1,361,222,234	35,779	1,255,375,085	34,447
Accrued expenses		766,088,163	-	598,722,297	-
Lease liabilities		26,046,759	55,005,940	27,752,325	44,352,768
Other	_	266,830,199	486,881,198	212,374,660	653,144,010
Total	₩ _	4,538,845,024	541,922,917	4,285,754,046	697,531,225

Other liabilities include withholdings, guarantee deposits received, etc.

17. Borrowings

(1) Borrowings of the Group as of December 31, 2023 and 2022 are summarized as follows:

(In thousands of won)		2023	2022
Short-term borrowings			
Current portion of debentures in Korean won	₩	-	219,901,411
Current portion of long-term borrowings in foreign currency		570,636,000	420,059,856
Disposals of trade receivable		1,183,024,326	1,252,676,717
Short-term borrowings in foreign currency		1,114,614,626	958,545,230
Sub total		2,868,274,952	2,851,183,214
Long-term borrowings			
Long-term borrowings in foreign currency		2,849,524,920	2,297,040,000
Total	₩	5,717,799,872	5,148,223,214

17. Borrowings, Continued

(2) Debentures issued by the Parent company as of December 31, 2023 and 2022 are as follows:

1) 2023

As of December 31, 2023, none of debenture has been issued by the Group.

2) 2022

(In thousands of won)

Type	Classification	Date of maturity	Annual Interest rate (%)	Amount
Corporate Bonds	Unsecured	2023.09.11	2.41	₩	220,000,000
	Less discoun			(98,589)	
Total				₩	219,901,411

(3) Short-term borrowings in foreign currency as of December 31, 2023 and 2022 are summarized as follows:

1) 2023

(In thousands of won)

Borrower	Financial institution	Description	Way of Redemption	Annual interest rate (%)	2023	2022
SDIHU	HSBC and others	Operation fund	Redeemed on maturity date	EURIBOR 3M+0.50 ~ 0.55	858,574,456	673,923,203
TSDI	BoComm and others	Operation fund	Redeemed on maturity date	LPR-1.10 ~ 0.95	137,367,575	199,348,641
NOVALED	Sparkasse and others	Operation fund	Redeemed on maturity date	SOFR 3M+1.0 ~ 1.06	-	25,902,798
SAPB	HSBC and others	Operation fund	Redeemed on maturity date	LPR-0.96	-	59,370,588
SDITB	BoComm and others	Operation fund	Redeemed on maturity date	LPR-1.05 ~ 0.55	118,672,595	
Total					₩ 1,114,614,626	958,545,230

17. Borrowings, Continued

(4) Long-term borrowings in foreign currency as of December 31, 2023 and 2022 are summarized as follows:

(In thousands of won)

Borrower	Financial institution	Description	Way of Redemption	Annual interest rate (%)	2023	2022
SAPB	HSBC	Operation fund	Redeemed on maturity date	HIBOR 2M+0.40	70,527,600	63,174,353
SDIHU	Korea Exim bank	Operation fund	Redeemed on maturity date	EURIBOR 3M+0.40 ~ 1.04	3,349,633,320	2,567,280,000
SDITB	KBD	Operation fund	Redeemed on maturity date	LIBOR 3M+0.76	-	86,645,503
Sub total Less current po	ortion of long-term				3,420,160,920	2,717,099,856
borrowings					(570,636,000)	(420,059,856)
Total					₩ 2,849,524,920	2,297,040,000

18. Provisions

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

1) 2023

	(In thousands of won)		Beginning balance	Provisions made	Provisions used	Ending balance
	Quality assurance	₩	320,736,926	92,524,367	(62,964,708)	350,296,585
Current	Long-term incentives		-	13,835,283	-	13,835,283
Current	Others		10,772,050	17,824,960	(8,965,779)	19,631,231
	Sub total		331,508,976	124,184,610	(71,930,487)	383,763,099
	Long-term incentives	₩	40,595,202	10,349,379	(27,670,533)	23,274,048
Non-	Provision for recovery		32,180	2,926,304	(32,320)	2,926,164
current	Others		51,250,924	21,592,097	(5,902,568)	66,940,453
	Sub total		91,878,306	34,867,780	(33,605,421)	93,140,665
Total		₩	423,387,282	159,052,390	(105,535,908)	476,903,764

2) 2022

	(In thousands of won)	Ве	ginning balance	Provisions made	Provisions used	Ending balance
	Quality assurance	₩	239,980,403	197,909,269	(117,152,746)	320,736,926
Current	Long-term incentives		5,996,252	-	(5,996,252)	-
Current	Others		56,705,575	35,450,324	(81,383,849)	10,772,050
	Sub total		302,682,230	233,359,593	(204,532,847)	331,508,976
	Long-term incentives	₩	38,690,678	1,904,524	-	40,595,202
Non-	Provision for recovery		28,980	3,200	-	32,180
current	Others		54,592,052	2,784,190	(6,125,318)	51,250,924
	Sub total		93,311,710	4,691,914	(6,125,318)	91,878,306
Total		₩	395,993,940	238,051,507	(210,658,165)	423,387,282

- (1) The Group recognizes a warranty provision (quality assurance) for the estimated costs of future repairs and recalls as accrued expenses, based on the past experienced rate. The Group also recognizes estimated costs in case of its customers' product recall from its end-users.
- (2) The Group has long-term incentive plans for its executives based on three-year performance criteria and made a provision for the estimated incentive.
- (3) Other than provisions stated above, the Group recognized provision for litigations. However, as stated in Note 20, details of provisions for litigations are not disclosed as it may affect the result or the progress of pending litigations.
- (4) As of the end of the current term, the Group has no emission liabilities due to less greenhouse gas emissions than the number of free allocation allowances, and the number of free allocation allowances for the for the 3rd planning periods (2021-2025) are summarized as follows:

(In tCO2-eq)

For 2021	For 2022	For 2023	For 2024	For 2025
592,852	589,613	676,586	657,087	642,606

19. Employee Benefits

- (1) Employee benefit liabilities(assets) as of December 31, 2023 and 2022 are summarized as follows:
- 1) Present value of defined obligations

(In thousands of won)		2023	2022
Defined Benefit Obligations:			
Beginning balance	₩	672,626,239	719,644,106
Current service cost		63,508,936	69,897,860
Interest cost		37,796,106	23,923,815
Obligations transferred from related parties		(3,716,823)	(1,768,110)
Gross benefit payments		(27,652,301)	(27,272,570)
Actuarial gain arising from assumptions		93,358,260	(97,591,302)
Contribution to the defined contribution plan		(27,853,301)	(14,169,351)
Exchange rate fluctuations		72,549	(38,209)
Ending balance	₩	808,139,665	672,626,239
Plan Assets		(1,059,689,820)	(842,739,921)
Net defined benefit liability (asset)		(251,550,155)	(170,113,682)
2) Fair value of plan assets			
(In thousands of won)		2023	2022
Beginning balance	₩	842,739,921	710,285,844
Contributions paid into plan		217,011,208	149,906,118
Obligations paid by the plan		(18,245,611)	(17,704,508)
Contribution to the defined contribution plan		(27,853,301)	(14,169,351)
Interest income		48,840,140	24,119,971
Actuarial gain arising from assumptions		(5,931,296)	(9,945,434)
Plan assets transferred to related parties		3,167,249	318,598
Exchange rate fluctuations		(38,490)	(71,317)
Ending balance	₩	1,059,689,820	842,739,921

3) Other liabilities for employee benefits as of December 31, 2023 and 2022 are summarized as follows:

(In thousands of won)	2023	2022
Liabilities for paid absence	84,409,269	82,106,251
Long-term incentive provisions	37,109,331	40,595,202
Other long-term employee benefits	66,467,677	49,667,829
Total ₩	187,986,277	172,369,282

19. Employee Benefits, Continued

(2) Expenses for employee benefits for the years ended December 31, 2023 and 2022 are summarized as follows:

(In thousands of won)		2023	
Current service costs	₩	63,508,936	69,897,860
Interest cost		37,796,106	23,923,815
Interest income		(48,840,140)	(24,119,971)
Payment on defined contribution plans		10,485,854	9,109,929
Total	₩	62,950,756	78,811,633

(3) Fair value of plan assets as of December 31, 2023 and 2022 are summarized as follows:

(In thousands of won)		2023	2022
Severance insurance bonds	₩	1,059,442,891	842,479,510
National pension fund		246,929	260,411
Total	₩	1,059,689,820	842,739,921

(4) The Group determined the discount rate based on market returns of high-quality corporate bonds consistent with currencies and estimated payment terms of defined benefit obligations as of the reporting date in order to calculate present value of the defined benefit obligations. Principal actuarial assumptions for the years ended December 31, 2023 and 2022 are summarized as follows:

(ln %)	2023	2022
Expected rate of salary increase	3.87~5.72	3.25~3.98
Discount rate for defined benefit obligations	6.08~6.12	6.11~6.34

Assumptions regarding future mortality have been based on published statistics and mortality tables from Korea Insurance Development Institute. The weighted duration of expenses for employee benefits for the years ended December 31, 2023 and 2022 are 9.30 to 9.42 years and 7.10 to 11.21 years, respectively.

(5) Sensitivity analysis

Reasonably possible changes at the reporting date to one of the relevant actuarial assumptions as of December 31, 2023, holding other assumptions constant, would have affected the defined benefit obligation by the amounts shown below.

(In thousands of won)		Present value of Defined benefit obliga	ations
		If increased by 1%	If decreased by 1%
Expected rate of salary increase	₩	79,763,574	(70,103,801)
Discount rate		(66,687,720)	76,892,662

20. Commitment and Contingencies

- (1) As of December 31, 2023, the Group has been provided a guarantee of ₩ 7,909 million by Seoul Guarantee Insurance Co., Ltd. in relation to a court deposit and licensing procedures.
- (2) The Group is a defendant in civil damage claims filed in the Europe for collusion of CRTs, etc. The Group has estimated its potential loss related to the claims, but the actual compensation may differ significantly from the Group's estimation. The Group does not disclose details of on-going litigations considering the disclosure may have effect to outcome of pending litigations.
- (3) Other than cases described in (2) of this note to the consolidated financial statements, the Group is defendant of 64 pending litigations in local and foreign jurisdictions. The Group does not disclose details of the on-going litigations, as the disclosure may affect the result of the pending litigations. Effect of pending litigations on the Group's consolidated financial statements cannot be estimated reliably, as timing and amounts of compensations are uncertain.
- (4) The Group has following borrowing commitments as of December 31, 2023.

(In thousands of USD, In thousands of CNY, In thousands of EUR and hundred millions of won)

	Currency	Individual limit	Comprehensive limit	Name of financial institution
Bank overdrafts	KRW	55	-	Woori Bank and one other bank
General purpose loans	KRW	3,390	-	KEB HANA BANK and one other bank
	USD	695,729	-	Shinhan Bank and eight other banks
	CNY	3,350,000	-	Bank of China and three other banks
	EUR	830,000	-	Citi Bank and three other banks
A/S, Usance	USD	15,000	250,000	Shinhan Bank and three other banks
Guarantee payments for				
foreign currency (*)	USD	1,187,000	250,000	BNP PARIBS and seven other banks
D/A, D/P, O/A	USD	1,236,846	450,000	Woori Bank and nine other banks
Loans for Import trade	USD	-	350,000	DBS and three other banks
Total	KRW	3,445	-	
	USD	3,134,575	1,300,000	
	CNY	3,350,000	-	
	EUR	830,000	-	

^(*) Among the foreign currency guarantee payment limits, USD 250 million is contracted as an inclusive foreign currency limit, as it is overlapped with the O/A limit.

20. Commitment and Contingencies, Continued

(5) As of December 31, 2023, the group entered into a currency forward contract with the aim of avoiding risks from changes in the exchange rate. The gain or loss on the contract fair value hedging accounting in accordance with the entity's GAAP, and the gain or loss is recognized in profit or loss. The details of the contract are the transaction in which the foreign currency amount promised at the expiration date is delivered to the counterparty (financial institution) and the amount converted into the fixed exchange rate at the time of the contract is delivered from the counterparty.

As of December 31, 2023, the group settled the currency forward contracts. The gain on the valuation of derivatives of $\mbox{$W$}$ 968 million, the loss on the valuation of derivatives of $\mbox{$W$}$ 5,001 million and the gain on the transaction of derivatives of $\mbox{$W$}$ 18,148 million and the loss on the transaction of derivatives of $\mbox{$W$}$ 83 million are reflected in profit or loss.

(6) The Group has entered commercial swap contracts to hedge the purchase price fluctuation of raw materials. Details of the Group's commercial swap contracts are as follows:

(In USD)

		Remaining Quantity	Contract Price
Descriptions	Expiry Date	(tons)	(USD/ton)
Copper (Cu)	2024-12-31	1.700	5.296

As of December 31, 2023, the net carrying amount of the derivative asset related to commercial swap above is $\mbox{$W$}$ 7,031 million, and the Group recognized effective portion of gain on valuation of derivatives amounting $\mbox{$W$}$ 5,175 million as other comprehensive income, net of tax.

- (7) Until December 31, 2023, the Group has acquired 40% ownership of ECOPRO EM Co., Ltd. (Total investment till December 31, 2023: ¥ 128,000 million) Also, if the agreement is terminated due to a liability of a party, the Group owns put option respectively on all of the shares of ECOPRO EM Co., Ltd. owned by the Group and ECOPRO BM CO., LTD owns call option.
- (8) According to the joint venture agreement under with PHILOPTICS CO., LTD., within 20 years from the date of 5 years from the date of the agreement, the Group has the right to sell all or part of the shares of Philenergy Co., Ltd. owned by the Group to Philenergy Co., Ltd. or PHILOPTICS CO., LTD. Also, if the agreement is terminated due to a liability of a party, the Group and PHILOPTICS CO., LTD. owns put option and call option respectively on all the shares of Philenergy Co., Ltd. owned by the Group.
- (9) According to the joint venture contract signed with FCA US LLC., the Group can agree on the expiration of the contract period, and the Group has the right to exercise a call option on the stake in StarPlus Energy LLC. owned by FCA US LLC. at the expiration of the contract period. In addition, if the contract is terminated due to one-way or deadlock, the Group has a call option and FCA US LLC. has a put option for the StarPlus Energy LLC. stake owned by FCA US LLC.
- (10) As of December 31, 2023, the outstanding contract amount for the acquisition of tangible and intangible is $\frac{1}{2}$, 2,035,998 million.

21. Share Capital and Share Premium

(1) Share capital

Ordinary shares and preferred shares issued and outstanding as of December 31, 2023 and 2022 are summarized as follows:

1) 2023

(In shares)	Shares issued Treasury share		Shares outstanding
Ordinary shares	68,764,530	(3,331,391)	65,433,139
Preferred shares	1,617,896	(178,400)	1,439,496
Total	70,382,426	(3,509,791)	66,872,635

2) 2022

(In shares)	Shares issued	Treasury shares	Shares outstanding
Ordinary shares	68,764,530	(3,331,391)	65,433,139
Preferred shares	1,617,896	(178,400)	1,439,496
Total	70,382,426	(3,509,791)	66,872,635

(2) Share premium as of December 31, 2023 and 2022 are summarized as follows:

(In thousands of won)		2023	2022
Additional paid-in-capital	₩	4,838,555,882	4,838,555,882
Other share premiums		163,418,811	163,418,811
Total	₩	5,001,974,693	5,001,974,693

(3) Dividends by the Parent Company for the reporting periods ending December 31, 2023 and 2022 are summarized as follows. The dividends for the reporting periods ending December 31, 2023 will be presented as an agenda at the regular shareholders' meeting of the parent company.

(In thousands of won)	=	2023	2022
Ordinary shares (2023: ₩1,000 per share, 2022: ₩1,030 per share)	₩	65,433,139	67,396,133
Preferred shares (2023: ₩1,050 per share, 2022: ₩1,080 per share)	_	1,511,471	1,554,656
	₩	66,944,610	68,950,789

22. Other capital

Other capital comprises treasury shares of the Parent Company. Number of treasury shares and its carrying amount as of December 31, 2023 and 2022 are as follows:

(In thousands of won)	won) 2023		2022				
	_	Ordinary shares	Preferred shares	Total	Ordinary shares	Preferred shares	Total
Number of shares		3,331,391	178,400	3,509,791	3,331,391	178,400	3,509,791
Carrying amount	₩	336,813,481	8,318,103	345,131,584	336,813,481	8,318,103	345,131,584

23. Accumulated Other Comprehensive Income

Accumulated other comprehensive income, net of tax, as of December 31, 2023 and 2022 are summarized as follows:

(In thousands of won)		2023	2022
Equity instruments at FVOCI – net change in fair value	₩	388,021,284	310,011,247
Gain(loss) on derivatives valuation		5,175,033	22,185,366
Unrealized change on equity method investments		480,899,254	493,181,443
Gain (loss) on translation of foreign operations		288,057,322	178,438,837
Total	₩	1,162,152,893	1,003,816,893

24. Retained Earnings

Retained earnings as of December 31, 2023 and 2022 are summarized as follows:

(In thousands of won)	2023		2022	
Legal reserve	₩	183,235,277	179,533,582	
Discretionary reserve		7,056,478,000	6,198,238,000	
Unappropriated retained earnings		5,095,951,969	4,090,579,799	
Total	₩	12,335,665,246	10,468,351,381	

25. Selling, General, and Administrative Expenses

Details of selling, general and administrative expenses for the years ended December 31, 2023 and 2022 are summarized as follows:

(In thousands of won)	2023		2022	
Salaries and wages	₩	365,309,084	334,032,459	
Severance and retirement benefits		19,697,052	20,554,496	
Employee fringe benefits		115,916,191	102,180,332	
Depreciation		50,704,806	53,482,853	
Amortization		21,557,489	19,172,737	
Research and development expenses		1,136,360,995	1,076,352,606	
Transportation expenses		154,711,258	232,757,802	
Fees and commissions		151,373,265	142,470,917	
(Reversal of) Bad debt expenses		(38,377)	(90,503)	
Others		332,955,680	431,819,970	
Total	₩	2,348,547,443	2,412,733,669	

26. The Nature of Expenses

The nature of expenses for the years ended December 31, 2023 and 2022 are summarized as follows:

(In thousands of won)

	_	2023	2022
Changes in inventories	₩	(6,693,390,419)	(5,470,459,008)
Raw materials used		20,485,934,589	17,044,354,697
Salaries and wages		1,895,882,121	1,669,172,316
Severance and retirement benefits		84,770,309	96,900,343
Employee fringe benefits		568,102,996	499,220,111
Depreciation		1,659,657,716	1,408,100,379
Amortization		68,314,060	55,232,876
Others	_	3,005,660,162	3,013,534,789
Total	₩_	21,074,931,534	18,316,056,503

27. Other Income and Other Expenses

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

(In thousands of won)		2023	2022
Dividends income	₩	17,095,214	12,250,892
Rental income		120,483	332,498
Gain on sale of property, plant and equipment		2,981,837	4,287,067
Gain on sale of intangible assets		14,100	-
Gain on sale of investment property		14,720,499	6,454,062
Gain on lease termination		28,103	70,676
Miscellaneous income		41,685,361	39,602,824
Total	₩	76,645,597	62,998,019

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

(In thousands of won)		2023	2022
Donations	₩	9,023,577	7,719,130
Loss on sale of property, plant and equipment		20,268,989	113,273,606
Loss on impairment of property, plant and equipment		1,713,442	31,085,526
Loss on sale of intangible assets		13,771	318,439
Loss on impairment of intangible assets		2,045,303	3,128
Loss on lease termination		19,191	4,663
Miscellaneous expenses		17,226,683	53,912,454
Total	₩	50,310,956	206,316,946

28. Financial Income and Financial Expenses

Financial income and costs for the years ended December 31, 2023 and 2022 are summarized as follows:

(In thousands of won)		2023	2022
Financial income	<u></u>	_	
Interest income	₩	82,954,221	43,378,706
- Bank deposit		80,693,229	35,612,744
- Other		2,260,992	7,765,962
Gain on foreign currency transaction		842,064,411	973,041,270
Gain on foreign currency translation		97,612,450	264,036,354
Gain on valuation of derivatives		967,840	19,271,872
Gain on transaction of derivatives		18,148,101	10,832,244
Gain on valuation of financial assets at fair value through profit or loss		13,333,981	79,997,719
Gain on disposal of financial assets at fair value through profit or loss		6,471	87,808
Subtotal		1,055,087,475	1,390,645,973
Financial expenses			
Interest expense		273,624,155	90,058,982
- Borrowing		239,752,976	75,119,338
- Debentures		3,775,950	5,434,340
- Other		30,095,229	9,505,304
Loss on foreign currency transactions		798,101,104	978,729,104
Loss on foreign currency translation		125,098,077	300,760,298
Loss on valuation of derivatives		5,000,529	-
Loss on transaction of derivatives		82,604	4,066,889
Loss on disposal of other receivables		38,990,126	11,662,825
Loss on valuation of financial assets at fair value through profit or loss		1,769,425	54,619,083
Loss on disposal of financial assets at fair value through profit or loss		378	2,806,135
Loss on guarantee fee		3,219,100	58,025
Subtotal		1,245,885,498	1,442,761,341
Net financial expense	₩	190,798,023	52,115,368

29. Income Tax Expense

(1) Income tax expense for the years ended December 31, 2023 and 2022 are summarized as follows:

(In thousands of won)		2023	2022
Current income taxes	₩	265,729,020	362,740,808
Deferred income taxes from changes in temporary differences		301,266,537	160,863,625
Changes in deferred income taxes due to tax credit carry forward		(147,033,889)	(42,313,717)
Changes in deferred income taxes due to changes in the tax	x rate	-	131,109,165
Others (exchange rate differences)		135,787	514,060
Income tax expense	W	420,097,455	612,913,941

(2) Deferred tax assets and liabilities recognized at stockholders' equity as of December 31, 2023 and 2022 are summarized as follows:

1) 2023

(In thousands of won)	Before tax	Deferred tax assets (liabilities)	After tax
Income tax related to items recognized directly in equity:	A		
Share premium	44,411,694	5,421,821	49,833,515
Income tax related to items recognized as OCI:			
Actuarial gain (losses) from defined benefit plan	(137,622,413)	35,305,647	(102,316,766)
Change in equity of equity-accounted investees	944,589,436	(175,632,860)	768,956,576
Cash flow hedges – effective portion of changes in fair value	7,031,294	(1,856,262)	5,175,032
Equity instruments at FVOCI – net change in fair value	527,204,006	(139,182,722)	388,021,284
Total 4	1,385,614,017	(275,944,376)	1,109,669,641

(In thousands of won)		Before tax	Deferred tax assets (liabilities)	After tax
Income tax related to items recognized directly in equity:	d ₩			
Share premium		44,411,694	5,421,821	49,833,515
Income tax related to items recognized a OCI:	S	, ,	, ,	, ,
Actuarial gain (losses) from defined benefi	t			
plan		(38,522,955)	9,148,662	(29,374,293)
Change in equity of equity-accounted	d			
investees		851,658,708	(180,038,428)	671,620,280
Cash flow hedges – effective portion o	f			
changes in fair value		30,143,160	(7,957,794)	22,185,366
Equity instruments at FVOCI – net change in	า			
fair value		421,210,933	(111,199,686)	310,011,247
Total	₩	1,308,901,540	(284,625,425)	1,024,276,115

29. Income Tax Expense, Continued

(3) The relationship between income tax expense and accounting income for the years ended December 31, 2023 and 2022, is as follows.

(In thousands of won)		2023	2022
Profit before income tax	₩	2,486,144,017	2,652,275,389
Income tax using the Group's statutory tax rate		350,338,334	431,782,858
Adjustments			
Foreign withholding tax		18,085,881	18,312,562
Permanent differences		(58,386,262)	33,681
Carry-over deficit effect		5,835,123	8,050,869
Tax credits		(188,508,350)	(158,473,285)
Difference in tax rate		-	131,109,165
Consolidation adjustments, and others		292,732,729	182,098,091
Income tax expense	₩	420,097,455	612,913,941
Average effective tax rate		16.9%	23.1%

- (4) As of December 31, 2023, the tax effects of temporary differences were calculated by using expected tax rate for the year when the temporary differences are expected to be reversed.
- (5) Change in deferred tax assets (liabilities) for the years ended December 31, 2023 and 2022 are summarized as follows:

(In thousands of won)			2023			2022	
	_	Beginning balance	Changes	Ending balance	Beginning balance	Changes	Ending balance
Tangible/Intangible assets Investment in	₩	116,016,250	(2,022,616)	113,993,634	98,647,981	17,368,269	116,016,250
subsidiaries and associates		(1,915,001,100)	(292,923,762)	(2,207,924,862)	(1,624,952,989)	(290,048,111)	(1,915,001,100)
Inventories		6,342,914	(2,078,420)	4,264,494	3,951,753	2,391,161	6,342,914
Accrued expenses		141,976,893	3,827,695	145,804,588	112,292,074	29,684,819	141,976,893
Available-for-sale financial assets		(75,226,801)	33,790,769	(41,436,032)	(99,121,965)	23,895,164	(75,226,801)
Others	_	(77,556,009)	(64,018,260)	(141,574,269)	3,273,905	(80,829,914)	(77,556,009)
Sub total		(1,803,447,853)	(323,424,594)	(2,126,872,447)	(1,505,909,241)	(297,538,612)	(1,803,447,853)
Deferred tax added to capital	_	(284,625,425)	8,681,049	(275,944,376)	(302,023,973)	17,398,548	(284,625,425)
Tax credit		200,586,672	147,033,889	347,620,561	158,272,955	42,313,717	200,586,672
Temporary differences of subsidiaries		162,476,697	39,163,180	201,639,877	137,141,397	25,335,300	162,476,697
Total	₩			(1,853,556,385)			(1,725,009,909)

- (6) At 31 December 2023, there was a deferred tax liability of \text{\psi}130,183 million for temporary differences of \text{\psi}493,118 million related to investments in subsidiaries. However, this liability was not recognized because the Group is able to control the timing of the reversal of the temporary differences and it is probable that it will not reverse in the foreseeable future.
- (7) The Group believes that its accruals for tax liabilities are adequate for all open tax years based on its assessment of many factors, including interpretations of tax law and prior experience.

29. Income Tax Expense, Continued

8) Global Minimum Tax

The Global Minimum Tax is a system in which multinational companies located in a country where the effective tax rate falls below 15%, with sales revenue on consolidated financial statements exceeding 0.75 billion euros in at least 2 of the previous 4 years, are required to pay the corresponding amount to the tax authorities in the country to which the Parent Company meeting specific conditions belongs.

Republic of Korea, where the Parent Company of the Group is located, enacted legislation related to the Global Minimum Tax in 2023, and it is required to apply the Global Minimum Tax from the business year beginning on January 1, 2024.

The Group believes that it falls under the scope of the application of the Global Minimum Tax law. However, as the related laws in Korea are scheduled to be enforced from January 1, 2024, there is no impact on the current and deferred income tax expenses for the current period. Additionally, the Group is applying the temporary exemption rule for deferred tax under K-IFRS No. 1012, and as a result, it does not recognize deferred income tax assets and liabilities related to the Global Minimum Tax law and does not disclose information related to deferred tax.

Since the laws of the country of the subsidiary, which is primarily affected by the Global Minimum Tax law, are either not enacted or specific regulations are still in progress, it is difficult to reasonably estimate the impact on the Group at the end of the current period. Each subsidiary of the Group is reviewing the potential impact on the consolidated financial statements in consultation with tax experts in each country.

30. Earning per Share

- (1) Basic earnings per share
- 1) Basic earnings per share for the years ended December 31, 2023 and 2022 are calculated as follows:
- (i) Ordinary Shares

(In thousands of won, except earnings per share)	2023	2022
Profit attributable to the owners of the Company ¥	√ 2,009,207,126	1,952,148,536
Profit attributable to ordinary shares	1,965,886,639	1,910,056,287
Weighted average number of ordinary shares (basic)	65,433,139	65,433,139
Basic earnings per share (won)	30,044	29,191
(ii) Preferred Shares		
(In thousands of won, except earnings per share)	2023	2022
Profit attributable to the owners of the Company ¥	√ 2,009,207,126	1,952,148,536
Profit attributable to preferred shares	43,320,488	42,092,249
Weighted average number of preferred shares (basic)	1,439,496	1,439,496
Basic earnings per share (won)	30,094	29,241

30. Earning per Share, Continued

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

(i) Ordinary Shares

(In shares)	2023	2022
Issued ordinary shares at January 1	68,764,530	68,764,530
Treasury stock	(3,331,391)	(3,331,391)
Weighted-average number of common shares outstanding (basic)	65,433,139	65,433,139
referred Shares		

(ii) Preferred Shares

(In shares)	2023	2022
Issued preferred shares at January 1	1,617,896	1,617,896
Treasury stock	(178,400)	(178,400)
Weighted-average number of common shares outstanding (basic)	1,439,496	1,439,496

The preferred shares are not entitled for priority rights other than additional dividend of 1% per annum, compared to ordinary shares, the Group considers the preferred shares as ordinary shares with different dividend ratio.

(2) Diluted earnings per share

Diluted earnings per share are same as basic earnings per share as there are no diluted effects for the years ended December 31, 2023 and 2022.

31. Leases

Information related to leases for which the Group is a lessee is as follows.

(1) Right-of-use assets

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

1) 2023

(In thousands of won)		Land	Buildings and structures	Tools, furniture, and fixtures	Total
Beginning balance	₩	8,589,272	55,583,386	5,015,368	69,188,026
Acquisition cost		13,762,617	74,265,664	11,209,676	99,237,957
Accumulated depreciation		(5,173,345)	(18,682,278)	(6,194,308)	(30,049,931)
Acquisitions and capital expenditure		1,721,610	31,978,245	7,028,742	40,728,597
Depreciation		(7,158,638)	(18,683,916)	(3,623,383)	(29,465,937)
Disposals		-	(965,432)	(263,768)	(1,229,200)
Exchange rate fluctuation		(27,822)	(1,955,362)	(362,887)	(2,346,071)
Ending balance	₩	3,124,422	65,956,921	7,794,072	76,875,415
Acquisition cost Accumulated depreciation		12,620,161 (9,495,739)	103,089,339 (37,132,418)	14,421,196 (6,627,124)	130,130,696 (53,255,281)

2) 2022

(In thousands of won)		Land	Buildings and structures	Tools, furniture, and fixtures	Total
Beginning balance	₩	1,823,232	29,009,016	4,402,972	35,235,220
Acquisition cost		9,749,730	63,878,503	9,450,839	83,079,072
Accumulated depreciation		(7,926,498)	(34,869,487)	(5,047,867)	(47,843,852)
Acquisitions and capital expenditure		13,812,617	46,109,642	4,263,215	64,185,474
Depreciation		(6,576,822)	(15,878,927)	(2,920,002)	(25,375,751)
Disposals		-	(967,792)	(320,700)	(1,288,492)
Exchange rate fluctuation		(469,755)	(2,688,553)	(410,117)	(3,568,425)
Ending balance	₩	8,589,272	55,583,386	5,015,368	69,188,026
Acquisition cost		13,762,617	74,265,664	11,209,676	99,237,957
Accumulated depreciation		(5,173,345)	(18,682,278)	(6,194,308)	(30,049,931)

(2) Amounts recognized in expenses related to lease for the years ended December 31, 2023 and 2022 are as follows:

(In thousands of won)		2023	2022
Interest on lease liabilities	₩	3,523,805	1,394,299
Expenses relating to short-term leases		10,966,862	7,002,867
Expenses relating to leases of low-value assets, excluding short-term leases of low-value assets		1,674,595	2,011,757
Total	₩	16,165,262	10,408,923

31. Leases, continued

(3) Maturities of lease liabilities for the years ended December 31, 2023 and 2022 are as follows:

(In thousands of won)		2023	2022
Less than one year	₩	26,631,906	28,234,309
One to five years		48,260,719	35,676,658
More than five years		19,512,069	17,084,727
Total undiscounted lease liabilities as of 31 December		94,404,694	80,995,694
Lease liabilities recognized in the statement of financial position as of 31 December		81,052,699	72,105,093
Current lease liabilities		26,046,759	27,752,325
Non-current lease liabilities		55,005,940	44,352,768

(4) Amounts recognized in statement of cash flow for the years ended December 31, 2023 and 2022 are as follows:

(In thousands of won)		2023	2022	
Total cash outflow for leases	₩	52,224,103	39,578,585	

(5) Extension option

Some leases contain extension options exercisable by the Group before the end of the non-cancellable contract period. The Group seeks to include extension options in new leases to provide operational flexibility. The Group estimates the lease period by assessing at the lease commencement date whether it is reasonably certain to exercise the extension option.

(6) Details of leases as lessor are as follows:

The Group leases out its investment property. The Group has classified these leases as operating leases, because they do not transfer most of the risks and rewards incidental to the ownership of the assets. The following is the maturity analysis table for operating lease payments, and the lease payments to be received after the end of the reporting period are presented in undiscounted amounts.

(In thousands of won)		2023	2022	
Less than one year	₩	4,480,461	4,509,895	
One to five years		8,955,630	9,099,826	

32. Related Parties

(1) List of the Group's related parties are as follows:

Associates Samsung Display Co., Ltd. ("SDC") and subsidiaries

Samsung Global Research Co., Ltd. SD FLEX CO., LTD. ("SDFLEX")

ECOPRO EM Co., Ltd. ("ECOPROEM")
Philenergy Co., Ltd. ("Philenergy")

Intellectual Keystone Technology LLC ("IKT")

Secondary Battery Growth Fund

Other Related Parties ECOPRO BM Co., Ltd. ("ECOPROBM")

Conglomerate entities Samsung Electronics Co., Ltd.("SEC"), Samsung C&T Corporation, and etc.

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

1) 2023

			Disposal of Property, Plant		Inventory	Purchase of property plant	
(In thousands of won)	_	Revenues	and Equipment	Other Income	purchase	and equipment	Other expenses
Associates							
SDC and its subsidiaries	₩	384,860,592	81,418	30,880,023	2,370,470	4,259,653	1,807,036
Samsung Global Research Co., Ltd.		-	-	-	-	-	13,648,023
SD FLEX CO., LTD.		140,664	-	1,216,478	7,949,929	-	44,106
ECOPROEM		-	-	586,823	3,723,367,644	-	20,576,724
Philenergy CO., LTD.		-	-	-	-	251,233,594	2,845,755
Other Related Parties							
ECOPROBM		-	-	21,019,789	452,711,903	-	1,107,889
Conglomerate entities							
SEC and its subsidiaries		1,334,410,603	-	3,641,266	1,683,821	18,542,020	74,821,263
Others	_	167,325		47,863,736	7,206,317	107,324,882	227,177,140
Total	₩_	1,719,579,184	81,418	105,208,115	4,195,290,084	381,360,149	342,027,936

					Purchase of property plant and	
(In thousands of won)	_	Revenues	Other Income	Inventory purchase	equipment	Other expenses
Associates						
SDC and its subsidiaries Samsung Global Research Co.,	₩	401,449,369	31,481,079	2,369,753	-	1,482,080
Ltd.		-	-	-	-	9,634,783
SD FLEX CO., LTD.		147,312	1,263,968	15,172,507	-	56,624
ECOPROEM		-	-	2,161,138,608	-	701,795
Philenergy CO., LTD.		-	-	-	139,898,976	2,065,220
Other Related Parties						
ECOPROBM		-	311,501	1,019,537,801	-	73,928
Conglomerate entities						
SEC and its subsidiaries		1,368,792,891	2,287,681	2,226,515	8,143,019	59,803,135
Others	_	1,362,763	6,963,273	5,330,407	48,766,577	225,250,981
Total	₩	1,771,752,335	42,307,502	3,205,775,591	196,808,572	299,068,546

32. Related Parties, Continued

- (4) Details of significant account balances with related parties as of December 31, 2023 and 2022 are summarized as follows:

1) 2023

(In thousands of won)	_	Account receivable	Other receivable, etc.	Account payable	Other payable, etc.
Associates					
SDC and its subsidiaries	₩	53,910,666	23,250	505,331	28,676
Samsung Global Research Co., Ltd.		-	-	-	6,414,944
SD FLEX CO., LTD.		12,894	94,799	515,957	7,950
ECOPROEM		-	-	598,535,811	1,616,974
Philenergy CO., LTD.		-	-	-	653,749
Other Related Parties					
ECOPROBM		-	20,815,867	31,229,940	400,367
Conglomerate entities					
SEC and its subsidiaries		118,918,487	9,410,211	-	118,902,279
Others	_	2,329	26,518,106	600,186	110,386,009
Total	₩_	172,844,376	56,862,233	631,387,225	238,410,948

(In thousands of won)	_	Account receivable	Other receivable, etc.	Account payable	Other payable, etc.
Associates					
SDC and its subsidiaries	₩	25,420,529	2,288,000	48,543	23,192
Samsung Global Research Co., Ltd.		-	-	-	241,051
SD FLEX CO., LTD.		11,926	137,268	747,219	5,836
ECOPROEM		-	66,624,825	624,318,382	193,731
Philenergy CO., LTD.		-	-	-	1,076,346
Other Related Parties					
ECOPROBM		-	16,185,276	140,527,568	10,618
Conglomerate entities					
SEC and its subsidiaries		106,283,787	8,455,496	-	122,836,552
Others	_	2,329	27,315,440	729,772	71,727,457
Total	₩_	131,718,571	121,006,305	766,371,484	196,114,783

32. Related Parties, Continued

5) The compensation paid or payable to key management (executive directors) for their services for the years ended December 31, 2023 and 2022 consists of:

(In thousands of won)		2023	2022	
Short-term employee benefits	₩	8,243,044	6,344,179	
Post-employment benefits		1,005,660	1,322,060	
Other long-term employee benefits	_	(3,968,645)	5,530,000	

33. Non-controlling Interest

Information related to non-controlling interests of subsidiaries that are material to the Group for the years ended December 31, 2023 and 2022 are as follows:

(A) Percentage of non-controlling interests and accumulated non-controlling interests

		STARPLU	JS	
(In thousands of won)	<u></u>	2023	2022	
		_	_	
Percentage of non-controlling interests		49.0%	49.0%	
Accumulated non-controlling interests	₩	791,611,106	189,900,689	

⁽B) The summarized financial information for each subsidiary with non-controlling interests that are material to the Group before the intercompany eliminations for the years December 31, 2023 and 2022 are as follows:

(1) Summarized statements of financial position

	_	US		
(In thousands of won)	-	December 31, 2023	December 31, 2022	
Current assets	₩	211,202,327	163,022,956	
Non-current assets		1,587,528,900	224,777,149	
Current liabilities		182,728,871	31,677	
Non-current liabilities		253,487	-	
Equity	_	1,615,748,869	387,768,428	

33. Non-controlling Interest, Continued

- (B) The summarized financial information for each subsidiary with non-controlling interests that are material to the Group before the intercompany eliminations for the years December 31, 2023 and 2022 are as follows:, continued
- (2) Summarized statements of comprehensive income

		STARPLU	US	
(In thousands of won)		2023	2022	
Loss of the year	₩	(30,189,536)	(25,950)	

(3) Summarized statements of cash flows

		STARPLU	S
(In thousands of won)		2023	2022
Cash flows from operating activities	₩	(5,353,266)	(87,797)
Cash flows from investing activities		(1,216,560,274)	(229,000,661)
Cash flows from financing activities		1,266,340,676	395,091,438
Effect of exchange rate changes on cash and cash equivalents		2,272,674	(3,066,201)
Increase in cash and cash equivalents		46,699,810	162,936,779
Cash and cash equivalents at beginning of the year		162,936,779	-
Cash and cash equivalents at end of year		209,636,589	162,936,779

34. Statement of Cash Flows

Adjustment and changes in assets and liabilities for cash flows from operating activities for the years ended December 31, 2023 and 2022 are summarized as follows:

(1) Adjustment for cash flows from operating activities

(In thousands of won)		2023	2022
Severance & retirement benefits	₩	52,464,902	69,701,704
(Reversal of) valuation of inventories		(17,131,010)	9,826,025
Depreciation		1,659,657,716	1,408,100,379
Amortization		68,314,060	55,232,876
(Reversal of) bad debt expense		(38,377)	(90,503)
Share of profit of equity accounted investees		(1,017,238,435)	(1,039,696,670)
Loss (gain) on sale of investments		(14,720,499)	(6,454,062)
Loss (gain) on foreign currency translations, net		27,485,627	36,723,944
Loss (gain) on valuation of derivative financial instruments		4,032,689	(19,271,872)
Loss (gain) on transaction of derivative financial instruments		(18,065,497)	(6,765,355)
Loss (gain) on sale of property, plant and equipment, net		17,287,152	108,986,539
Impairment losses on property, plant and equipment		1,713,443	31,085,526
Loss (gain) on sale of intangible assets		(329)	318,439
Impairment losses on intangible assets		2,045,303	3,128
Equity instruments at FVTPL – net change in fair value		(11,564,556)	(25,378,636)
Loss (gain) on sale of equity instruments at FVTPL		(6,093)	2,718,327
Transfer of provisions		110,897,699	131,942,422
Loss(gain) no lease termination		(8,912)	(66,013)
Income tax expense		420,097,455	612,913,941
Interest expense		273,624,156	90,058,982
Interest income		(82,954,221)	(43,378,706)
Dividend income		(17,095,214)	(12,250,892)
Loss on sale of account receivables		38,990,126	11,662,825
Miscellaneous profit		-	(169,755)
Miscellaneous loss	<u>-</u>	96,519	
Total	₩	1,497,883,704	1,415,752,593

34. Statement of Cash Flows, Continued

(2) Changes in assets and liabilities for Cash Flows from Operating Activities

(In thousands of won)		2023	2022
Changes in assets and liabilities:			
Trade receivables	₩	(483,631,437)	(673,192,991)
Other receivables		71,886,339	(168,058,699)
Other current assets		(10,014,320)	(71,269,153)
Inventories		(134,096,583)	(678,279,892)
Non-current other receivables		(509,372)	275,832
Non-current other assets		(40,732,495)	(43,767,300)
Trade payables		(119,589,044)	851,409,875
Other payables		(126,041,592)	(21,751,948)
Advance received		338,644,388	89,026,555
Other non-current payables		(219,383,712)	368,395,413
Settlement of derivative financial instruments		18,065,495	6,765,356
Payment of retirement and employee benefits		(59,439,418)	(42,234,885)
Plan assets		(173,542,455)	(118,035,833)
Total	₩	(938,384,206)	(500,717,670)

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

(In thousands of won)		2023	2022
Decrease of receivables related to disposal of plant, property, and equipment	₩	684	13,424,571
Increase (decrease) of payables related to acquisition of plant, property, and equipment		71,906,910	(170,378,249)

34. Statement of Cash Flows, Continued

(4) Reconciliation of movements of liabilities to cash flows arising from financing activities are as follows:

1) 2023

(In thousands of won)			Non-cash changes			
			Cash flow from	New lease		December 31,
		January 1, 2023	financing activities	contracts	Other ¹	2023
Current portion of debentures	₩	219,901,411	(220,000,000)	-	98,589	-
Short-term borrowings		2,631,281,803	59,017,649	-	177,975,500	2,868,274,952
Long-term borrowings		2,297,040,000	542,010,735	-	10,474,185	2,849,524,920
Lease liabilities		72,105,093	(36,058,841)	40,728,597	4,277,849	81,052,698
Total	₩	5,220,328,307	344,969,543	40,728,597	192,826,123	5,798,852,570

¹Other includes amortization and effects of changes in foreign currency exchange rates.

(In thousands of won)			<u>-</u>	Non-cash changes		
			Cash flow from	New lease		December 31,
		January 1, 2022	financing activities	contracts	Other ¹	2022
Debentures	₩	219,762,470	-	-	138,941	219,901,411
Short-term borrowings		2,510,216,803	(269,004,384)	-	390,069,384	2,631,281,803
Long-term borrowings		1,887,998,333	806,441,268	-	(397,399,601)	2,297,040,000
Lease liabilities		38,561,071	(30,563,962)	64,185,474	(77,490)	72,105,093
Total	₩	4,656,538,677	506,872,922	64,185,474	(7,268,766)	5,220,328,307

¹Other includes amortization and effects of changes in foreign currency exchange rates.