

SAMSUNG SDI CO., LTD. AND SUBSIDIARIES

Consolidated Financial Statements

December 31, 2021 and 2020

(With Independent Auditors' Report Thereon)

Contents

	Page
Independent Auditors' Report	2
Consolidated Statements of Financial Position	6
Consolidated Statements of Comprehensive Income	7
Consolidated Statements of Changes in Equity	8
Consolidated Statements of Cash Flows	10
Notes to the Consolidated Financial Statements	11

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, 2021 and 2020, the consolidated statements of comprehensive income, changes in equity and cash flows for the years then ended, and notes, comprising significant accounting policies and other explanatory information.

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

Basis for Opinion

We conducted our audits in accordance with Korean Standards on Auditing (KSAs). Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Consolidated Financial Statements section of our report. We are independent of the Group in accordance with the ethical requirements that are relevant to our audit of the consolidated financial statements in Republic of Korea, and we have fulfilled our 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, 2021. 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.

Impairment on cash generating unit including goodwill

1) Risk

The Group allocates goodwill to the electronic materials business and Novaled, and the carrying amount of property, plant and equipment and intangible assets in the relevant division is ₩1,316,747 million as of the end of the reporting period.

Since the estimation of future cash flows used in measuring the cash flow model includes the management's judgment on the uncertainty and discount rate given to the economic environment of the electronic materials industry, we identified the impairment assessment of the cash generating unit to which goodwill was allocated 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:

- We performed the retrospective review by comparing the previous estimates with actual financial indicators in order to assess the appropriateness of key assumptions applied by management while calculating estimates.
- We involved an internal valuation specialist to assist us in assessing the appropriateness of the sales growth rate, operating margin, and discount rate applied by management when estimating the cash flow forecasts of the cash-generating unit in comparison with past performance and market conditions.
- We checked whether the consolidated financial statements of the Group properly disclosed the valuation techniques, key assumptions and variables required by the K-IFRS

The existence of automotive battery revenue

1) Risk

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

As the amount of automotive battery revenue is significant in the consolidated financial statements and the management incentive to overstate revenue is high, we identified 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:

- Evaluating the existence of automotive battery revenue, on a sample basis, by reconciling to the external evidences regarding the shipment of automotive batteries.
- Evaluating the adequacy of the timing of automotive battery revenue recognition, on a sample basis, by inspecting the terms and conditions set out in the revenue contracts.

Other Matter

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

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

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

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

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



Auditors' Responsibilities for the Audit of the Consolidated Financial Statements

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

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

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.
- Evaluate the appropriateness of accounting policies used 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 Samjong Accounting Corp.

Seoul, Korea
February 24, 2022

This report is effective as of February 24, 2022, 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, 2021 and 2020

(In thousands of won)

	<u>Note</u>	<u>2021</u>	<u>2020</u>
Assets			
Cash and cash equivalents	4,6 ₩	2,325,692,348	1,545,974,322
Trade and other receivables, net	4,7,31	2,195,425,599	1,870,381,153
Inventories, net	8	2,487,316,319	1,810,785,261
Other investments	4,9	164,541,359	167,037,270
Other assets	10	258,708,109	256,395,938
Current derivative assets	4,19	13,223,334	6,831,222
Total current assets		<u>7,444,907,068</u>	<u>5,657,405,166</u>
Long-term trade and other receivables, net	4,7,31	13,538,048	25,279,489
Investments in equity-accounted investees	11	7,885,424,300	7,143,396,949
Property, plant and equipment, net	5,12,30	7,635,995,590	6,128,099,171
Intangible assets, net	5,13	798,911,068	793,573,297
Investment property	5,14	150,410,177	150,502,140
Deferred tax assets	28	140,864,869	96,846,429
Other non-current investments, including derivatives	4,9,19	1,572,410,117	1,358,684,147
Other non-current assets	10	105,884,741	106,629,883
Non-current derivative assets	4,19	84,847,019	73,815,597
Total non-current assets		<u>18,388,285,929</u>	<u>15,876,827,102</u>
Total assets	₩	<u>25,833,192,997</u>	<u>21,534,232,268</u>
Liabilities			
Trade and other payables	4,15,30,31 ₩	3,269,446,525	1,809,091,872
Income taxes payable	28	126,201,165	44,391,709
Advance received	5	211,277,273	353,726,971
Unearned revenue	5	39,131,550	17,761,782
Short-term borrowings	4,16,33	2,510,216,803	2,427,504,180
Derivative liabilities	4,19	2,330,250	28,783,094
Provisions	17,19	302,682,230	302,373,535
Total current liabilities		<u>6,461,285,796</u>	<u>4,983,633,143</u>
Trade and other payables	4,15,30,31	265,947,484	210,040,906
Long-term advance received	5	35,429,210	1,344,199
Long-term borrowings	4,16,33	2,107,760,803	1,484,319,605
Employee benefit liabilities, net	18	9,358,262	38,705,231
Derivative liabilities	4,19	10,016,687	-
Provisions	17,19	93,311,710	79,823,290
Deferred tax liabilities	28	1,653,383,731	1,377,439,006
Total non-current liabilities		<u>4,175,207,887</u>	<u>3,191,672,237</u>
Total liabilities		<u>10,636,493,683</u>	<u>8,175,305,380</u>
Capital stock	1,20	356,712,130	356,712,130
Capital surplus	20	5,001,974,693	5,001,974,693
Other capital	21	(345,131,584)	(345,131,584)
Accumulated other comprehensive income	22	1,174,235,558	545,959,020
Retained earnings	23	8,516,473,334	7,418,101,760
Equity attributable to owners of the Parent Company		<u>14,704,264,131</u>	<u>12,977,616,019</u>
Non-controlling interests	32	<u>492,435,183</u>	<u>381,310,869</u>
Total equity		<u>15,196,699,314</u>	<u>13,358,926,888</u>
Total liabilities and equity	₩	<u>25,833,192,997</u>	<u>21,534,232,268</u>

See accompanying notes to the consolidated financial statements.

For the years ended December 31, 2021 and 2020

(In thousands of won, except per share information)

	<u>Note</u>	<u>2021</u>	<u>2020</u>
Revenue	5,31 ₩	13,553,220,249	11,294,770,446
Cost of sales	8,18,25,31	(10,475,602,069)	(8,914,217,433)
Gross profit		3,077,618,180	2,380,553,013
Selling, general and administrative expenses	13,18,24,25,31	(2,010,042,579)	(1,709,217,655)
Operating income	5	1,067,575,601	671,335,358
Other income	26,31	51,960,888	50,205,003
Other expenses	26,31	(93,328,475)	(147,740,368)
Finance income	27	547,619,990	528,826,124
Finance costs	27	(440,534,600)	(591,925,691)
Share of profit of equity accounted investees	11	530,041,919	292,710,207
Profit before income taxes		1,663,335,323	803,410,633
Income tax expense	28	(412,933,762)	(172,444,336)
Profit for the year	23,29	1,250,401,561	630,966,297
Other comprehensive income			
Items that will never be reclassified to profit or loss:			
Defined benefit plan actuarial losses	18,23,28	(5,968,134)	4,557,254
Unrealized net changes in fair value of FVOCI financial assets	9	312,538,061	73,814,357
Related tax	28	(74,151,288)	(18,965,930)
Items that are or may be reclassified to profit or loss:			
Effective portion of unrealized changes in fair values of cash flow hedges	19	17,423,535	77,530,705
Change in equity of equity-method accounted investees	11	191,618,540	60,009,573
Change in gain on translation of foreign operations		238,564,516	(26,482,304)
Related tax	28	(50,560,667)	(33,853,803)
Other comprehensive income for the year, net of tax		629,464,563	136,609,852
Total comprehensive income	₩	1,879,866,124	767,576,149
Profit attributable to:			
Owners of the Parent Company	29 ₩	1,169,801,395	574,723,494
Non-controlling interests	32	80,600,166	56,242,804
Total comprehensive income attributable to:			
Owners of the Parent Company		1,793,592,722	719,623,908
Non-controlling interests	32	86,273,401	47,952,240
Earnings per share	29		
Basic earnings per share - Ordinary share	₩	17,492	8,593
Basic earnings per share - Preferred share		17,542	8,643

See accompanying notes to the consolidated financial statements.

SAMSUNG SDI CO., LTD. AND SUBSIDIARIES
Consolidated Statements of Changes in Equity

For the years ended December 31, 2021 and 2020

<i>(In thousands of won)</i>		<u>Capital stock</u>	<u>Capital surplus</u>	<u>Other capital</u>	<u>Accumulated other comprehensive income</u>	<u>Retained earnings</u>	<u>Non-controlling interests</u>	<u>Total equity</u>
Balance at January 1, 2020	₩	356,712,130	5,001,974,693	(345,131,584)	404,513,004	6,906,868,478	335,408,475	12,660,345,196
Comprehensive income								
Profit for the year		-	-	-	-	574,723,494	56,242,803	630,966,297
Defined benefit plan actuarial gain		-	-	-	-	3,454,398	-	3,454,398
Effective portion of unrealized changes in fair values of cash flow hedges		-	-	-	58,768,274	-	-	58,768,274
Changes in fair values of FVOCI financial assets		-	-	-	55,951,283	-	-	55,951,283
Change in equity of equity-accounted investees		-	-	-	44,918,200	-	-	44,918,200
Change in gain on translation of foreign operations		-	-	-	(18,191,741)	-	(8,290,563)	(26,482,304)
Total comprehensive income		-	-	-	141,446,016	578,177,892	47,952,240	767,576,148
Transactions with shareholders								
directly recognized in equity								
Dividends paid		-	-	-	-	(66,944,610)	(2,231,986)	(69,176,596)
Capital contribution from non- controlling interests		-	-	-	-	-	172,620	172,620
Capital reduction to non-controlling interests		-	-	-	-	-	(30,480)	(30,480)
Foundation of subsidiaries		-	-	-	-	-	40,000	40,000
Balance at December 31, 2020	₩	356,712,130	5,001,974,693	(345,131,584)	545,959,020	7,418,101,760	381,310,869	13,358,926,888

See accompanying notes to the consolidated financial statements.

SAMSUNG SDI CO., LTD. AND SUBSIDIARIES
Consolidated Statements of Changes in Equity

For the years ended December 31, 2021 and 2020, Continued

<i>(In thousands of won)</i>		<u>Capital stock</u>	<u>Capital surplus</u>	<u>Other capital</u>	<u>Accumulated other comprehensive income</u>	<u>Retained earnings</u>	<u>Non-controlling interests</u>	<u>Total equity</u>
Balance at January 1, 2021	₩	356,712,130	5,001,974,693	(345,131,584)	545,959,020	7,418,101,760	381,310,869	13,358,926,888
Comprehensive income								
Profit for the year		-	-	-	-	1,169,801,395	80,600,166	1,250,401,561
Defined benefit plan actuarial gain		-	-	-	-	(4,485,211)	-	(4,485,211)
Effective portion of unrealized changes in fair values of cash flow hedges		-	-	-	13,207,039	-	-	13,207,039
Changes in fair values of FVOCI financial assets		-	-	-	236,903,850	-	-	236,903,850
Change in equity of equity-accounted investees		-	-	-	145,274,368	-	-	145,274,368
Change in gain on translation of foreign operations		-	-	-	232,891,281	-	5,673,235	238,564,516
Total comprehensive income		-	-	-	628,276,538	1,165,316,184	86,273,401	1,879,866,123
Transactions with shareholders directly recognized in equity								
Dividends to owners of the Company		-	-	-	-	(66,944,610)	(2,390,865)	(69,335,475)
Capital contribution from non- controlling interests		-	-	-	-	-	34,860,680	34,860,680
Capital reduction to non-controlling interests		-	-	-	-	-	(406,530)	(406,530)
Liquidation of subsidiaries		-	-	-	-	-	(7,212,371)	(7,212,371)
Balance at December 31, 2021	₩	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

See accompanying notes to the consolidated financial statementspolpoli.

For the years ended December 31, 2021 and 2020

(In thousands of won)

	<u>Note</u>	<u>2021</u>	<u>2020</u>
Cash flows from operating activities			
Profit for the year	₩	1,250,401,560	630,966,298
Adjustments for expense (benefit)	33	1,187,697,644	1,083,053,413
Changes in assets and liabilities	33	(24,604,442)	391,515,982
Interest received		13,573,960	12,380,644
Interest paid		(48,651,258)	(58,100,631)
Dividends received		15,385,096	13,580,122
Income taxes paid		(217,775,202)	(124,575,586)
Net cash provided by operating activities		<u>2,176,027,358</u>	<u>1,948,820,242</u>
Cash flows from investing activities			
Sale of other investments		273,753,611	35,210,001
Disposal of non-current assets held for sale		-	1,038,723
Proceeds from sale of property, plant and equipment		10,692,315	9,976,840
Proceeds from sale of intangible assets		1,746,072	5,550,412
Sale of subsidiaries, affiliates		1,389,603	-
Acquisition of other investment assets		86,857,352	4,700,985
Acquisition of property, plant and equipment		(42,291,984)	(73,340,022)
Acquisition of intangible assets		(2,254,718,266)	(1,728,269,788)
Acquisition of subsidiaries, affiliates		(2,291,915)	(4,300,095)
Increase of loan receivables		(24,670,000)	(29,000,040)
Net cash used in investing activities		<u>(1,949,533,212)</u>	<u>(1,778,432,984)</u>
Cash flows from financing activities			
Proceeds from short-term borrowings		1,443,570,249	1,271,203,046
Proceeds from long-term borrowings		881,522,739	740,043,845
Capital contribution from non-controlling interest		34,860,680	213,300
Dividends paid		(69,335,475)	(69,176,596)
Repayment of debentures		(370,000,000)	(100,000,000)
Repayment of short-term borrowings		(1,100,904,053)	(1,095,524,549)
Repayment of long-term borrowings		(205,899,907)	(485,032,943)
Capital reduction from non-controlling interest		(6,683,614)	(30,480)
Repayment of lease liabilities		(24,407,220)	(21,076,670)
Net cash from financing activities		<u>582,723,399</u>	<u>240,618,953</u>
Net increase in cash and cash equivalents		<u>809,217,545</u>	<u>411,006,209</u>
Cash and cash equivalents at January 1		1,545,974,322	1,156,295,421
Effect of exchange rate fluctuations on cash held		(29,499,520)	(21,327,308)
Cash and cash equivalents at December 31	₩	<u>2,325,692,347</u>	<u>1,545,974,322</u>

See accompanying notes to the consolidated financial statements.

For the years ended December 31, 2021 and 2020

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. The consolidated financial statements comprise the Company and 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 and its head office is located in Gi-heung, Gyeong-gi Do.

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

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

In addition to these local business locations, the Parent Company also has 19 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 of capital stock with a par value of ₩5,000 per share. As of December 31, 2021, 70,382,426 shares of capital 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 ₩356,712 million. The major shareholder of the Parent Company is Samsung Electronics Co., Ltd. (ownership: 19.13%). The Parent Company is allowed to retire its stock 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 ₩99,333 million on December 8, 2004 by appropriating retained earnings. The par value of outstanding shares is ₩351,912 million (₩343,823 million for common stock and ₩8,089 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, 2021 1,617,896 shares of non-cumulative and non-voting preferred stocks are eligible for these additional dividends.

For the years ended December 31, 2021 and 2020

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 27, 2022 and will be submitted for approval to general shareholders meeting to be held on March 17, 2022.

(1) Basis of measurement

The consolidated financial statements have been prepared on the historical cost basis except for the following material items in the statement of financial position:

- 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 make judgments, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income and expenses. Actual results may differ from these estimates.

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimates are revised and in any future periods affected.

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 3: Consolidation: whether the Group has de facto control over an investee;
- Note 11: Equity-accounted investees: whether the Group has significant influence over an investee; and
- Note 30: Lease term: whether the Group is reasonably certain to exercise extension options

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

- Notes 12 and 13: impairment test - key assumptions underlying recoverable amounts, including the recoverability of development costs;
- Notes 17 and 19: recognition and measurement of provisions and contingencies - key assumptions about likelihood and magnitude of an outflow of resources;
- Note 18: measurement of defined benefit obligations: key actuarial assumptions; and
- Note 28: recognition of deferred tax assets: availability of future taxable profit against which carry-forward tax losses can be used, cash reserve taxation

For the years ended December 31, 2021 and 2020

2. Basis of Preparation, Continued

(4) Fair value measurement

A number of the 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 reports 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 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 4: Financial Risk Management

For the years ended December 31, 2021 and 2020

3. Significant Accounting Policies

Significant 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.

(1) Basis of consolidation

1) Business combination

A business combination is accounted for by applying the acquisition method, unless it is a combination for entities or businesses under common control.

The consideration transferred in the acquisition is generally measured at fair value, as are the identifiable net assets acquired. Any goodwill that arises is tested annually for impairment. Any gain on a bargain purchase is recognized in profit or loss immediately. Acquisition-related costs, other than those associated with the issue of debt or equity securities recognized in accordance with K-IFRS No. 1032 and No. 1109, are expensed in the periods in which the costs are incurred and the services are received.

The consideration transferred does not include amounts related to the settlement of pre-existing relationships. Such amount are generally recognized in profit or loss.

Any contingent consideration payable is measured at fair value at the acquisition date. If the contingent consideration is classified as equity, then it is not re-measured and settlement is accounted for within equity. Otherwise, subsequent changes in the fair value of the contingent consideration are recognized in profit or loss.

If share-based payment awards (replacement awards) are required to be exchanged for awards held by the acquiree's replacement (acquiree's awards), then all or a portion of the amount of the acquirer's replacement awards is included in measuring the consideration transferred in the business combination. This determination is based on the market-based measure of the replacement awards compared with the market-based measure of the acquiree's awards and the extent to which the replacement awards relate to pre-combination service.

2) Non-controlling interests

Non-controlling interests ("NCI") are measured at their proportionate share of the acquiree's identifiable net assets at the acquisition date. Changes in the Group's interest in subsidiaries that do not result in a loss of control are accounted for as equity transactions.

3) Subsidiaries

Subsidiaries are entities controlled by the Group. The Group controls an entity when it is exposed, or has right to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. The financial statements of subsidiaries are included in the consolidated financial statements from the date on which control commences until the date on which control ceases.

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.

For the years ended December 31, 2021 and 2020

3. Significant Accounting Policies, Continued

(1) Consolidation, continued

3) Subsidiaries, continued

(i) The list of subsidiaries as of December 31, 2021 and 2020 are as follows: All subsidiaries' fiscal year end is December 31.

Subsidiaries	Location	Primary business	Percentage of ownership (*1)	
			2021	2020
Samsung SDI Japan Co., Ltd. ("SDIJ")	Japan	Supporting sales and purchase in Japan Manufacturing automotive batteries	100.0%	100.0%
Samsung SDI America, Inc. ("SDIA")	U.S.A.	Supporting sales of automotive and ESS batteries Market research of small-sized rechargeable battery	91.7%	91.7%
Samsung SDI Hungary Rt. ("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 and electronic materials	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 batteries	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 (Changchun) Power Battery Co., Ltd. ("SCPB")(*2)	China	Manufacturing and sales of automotive battery	-	50.0%
Samsung SDI (Tianjin) Battery Co., Ltd. ("SDITB")	China	Manufacturing and sales of rechargeable battery	80.0%	80.0%
Samsung SDI (Wuxi) Battery Systems Co., Ltd. ("SWBS")(*2)	China	Manufacturing and sales of automotive battery	-	50.0%
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%
Novald 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") (*3)	Korea	Investments in new technology venture business	99.0%	99.0%

For the years ended December 31, 2021 and 2020

3. Significant Accounting Policies, Continued

(1) Consolidation, continued

3) Subsidiaries, continued

(i) The list of subsidiaries as of December 31, 2021 and 2020 are as follows: All subsidiaries' fiscal year end is December 31, continued.

(*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.

(*2) SCPB and SWBS have been liquidated and excluded from subsidiaries.

(ii) Summarized financial information of subsidiaries as of and for the year ended December 31, 2021 are as follows:

(In thousands of won)

Subsidiaries	Assets	Liabilities	Equity	Revenue	Net profit (loss)	Total comprehensive income (loss)
STM	394,984,350	49,882,964	345,101,386	455,838,684	18,408,216	18,248,876
SVIC24	68,660,159	3,364,177	65,295,982	-	41,847,406	41,847,406
SVIC15	24,305,907	3,216	24,302,691	-	14,136,304	14,136,304
SVIC49	87,537,099	255,399	87,281,700	-	66,722,756	66,722,756
SDIJ	5,920,642	2,087,145	3,833,497	21,936,203	460,783	453,143
SDIA	280,486,620	245,215,634	35,270,986	429,164,227	(1,100,893)	1,745,414
NOVALED	586,859,209	34,065,796	552,793,413	167,235,958	74,937,291	75,623,739
SDIHU	4,927,473,678	4,095,198,107	832,275,571	2,775,168,322	42,578,380	40,526,772
SDIEU	34,686,395	21,896,148	12,790,247	37,849,382	4,293,941	4,281,781
SDIBS	285,942,930	168,213,675	117,729,255	413,752,086	15,380,886	15,391,412
SDIV	488,188,457	234,625,006	253,563,451	1,451,161,122	65,093,444	83,328,877
SDIEM	630,500,349	346,445,862	284,054,487	673,656,436	(10,142,251)	12,788,431
SDII	11,772,525	5,042,376	6,730,149	3,676,932	2,257,336	2,600,847
SDIW	767,078,157	316,661,337	450,416,820	1,298,185,859	55,490,348	99,403,896
TSDI	901,151,209	510,994,243	390,156,966	686,883,505	21,488,151	61,061,264
SDIHK	729,942,977	128,327,114	601,615,863	3,662,932	17,361,700	53,924,984
SDIC	14,838,681	8,685,909	6,152,772	21,506,429	2,624,262	(1,074,002)
SAPB	878,262,918	485,045,724	393,217,194	934,750,663	73,208,266	100,545,579
SCPB(*)	-	-	-	-	(209,581)	833,836
SDITB	1,323,825,996	900,100,984	423,725,012	1,190,571,920	55,702,742	97,334,434
SWBS(*)	-	-	-	-	(105,394)	226,460

(*) The liquidation has been completed during the current year and contains financial information before liquidation.

For the years ended December 31, 2021 and 2020

3. Significant Accounting Policies, Continued

(1) Consolidation, continued

4) Loss of control

If the controlling company loses control of subsidiaries, the controlling company derecognizes the assets and liabilities of the former subsidiaries from the consolidated statement of financial position and recognizes the gain or loss associated with the loss of control attributable to the former controlling interest. Meanwhile, the controlling company recognizes any investment retained in the former subsidiaries at its fair value when control is lost.

5) Interest in equity – accounted investees

The Group's interests in equity-accounted investees comprise interests in associates and joint venture.

Associates are those entities in which the Group has significant influence, but not control or joint control, over the financial and operating policies. A joint venture is an arrangement in which the Group has joint control, whereby the Group has rights to the net assets of the arrangement, rather than rights to its assets and obligations for its liabilities.

Interests in associates and the joint venture are accounted for using the equity method. They are initially recognized at cost, which includes transaction costs. Subsequent to initial recognition, the consolidated financial statements include the Group's share of the profit or loss and OCI of equity-accounted investees, until the date on which significant influence or joint control ceases.

6) Transactions eliminated on consolidation

Intra-group balances and transactions, 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.

7) 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 differences between the net book value acquired and consideration transferred in capital surplus.

For the years ended December 31, 2021 and 2020

3. Significant Accounting Policies, Continued

(2) Foreign currency

1) Foreign currency Transactions

Transactions in foreign currencies are translated to the respective functional currencies of Group entities at exchange rates at the dates of the transactions. Monetary assets and liabilities denominated in foreign currencies are retranslated to the functional currency using the reporting date's exchange rate. Non-monetary assets and liabilities denominated in foreign currencies that are measured at fair value are retranslated to the functional currency at the exchange rate at the date that the fair value was determined. Non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the exchange rate at the date of the original transaction.

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

If the presentation currency of the Group is different from a foreign operation's functional currency, the financial statements of the foreign operation are translated into the presentation currency using the following methods:

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.

Any goodwill arising on the acquisition of a foreign operation and any fair value adjustments to the carrying amounts of assets and liabilities arising on the acquisition of that foreign operation is treated as assets and liabilities of the foreign operation. Thus, they are expressed in the functional currency of the foreign operation and translated at the closing rate.

When a foreign operation is disposed of, the cumulative amount in the translation reserve related to the foreign operation is reclassified to profit or loss as part of the gain or loss on disposal. On the partial disposal of a subsidiary that includes a foreign operation, the relevant proportion of such cumulative amount is reattributed to non-controlling interest. In any other partial disposal of a foreign operation, the relevant proportion is reclassified to profit or loss.

3) Translation of net investment in the foreign operation

Foreign exchange gains or losses arising from a monetary item receivable from or payable to a foreign operation, the settlement of which is neither planned nor likely to occur in the foreseeable future and which in substance is considered to form part of the net investment in the foreign operation, are recognized in other comprehensive income in the translation reserve.

For the years ended December 31, 2021 and 2020

3. Significant Accounting Policies, Continued

(3) Cash and cash equivalents

Cash and cash equivalents comprise cash balances and call deposits with maturities of three months or less from the acquisition date that are subject to an insignificant risk of changes in their fair value are used by the Group in the management of its short-term commitments. Equity investments are excluded from cash equivalents unless they are, in substance, cash equivalents, for example in the case of preferred shares when it has a short maturity with a specified redemption date.

(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.

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

2) Classification and subsequent measurement

On initial recognition, a financial asset is classified as measured at: amortized cost; FVOCI – debt investment; FVOCI – equity investment; or FVTPL. Financial assets are not reclassified subsequent to their initial recognition unless the Group changes its business model for managing financial assets, in which case all affected financial assets are reclassified on the first day of the first reporting period following the change in the business model.

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

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

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

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

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

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

For the years ended December 31, 2021 and 2020

3. Significant Accounting Policies, Continued

(4) Financial instruments, continued

3) Business model assessment

The Group makes an assessment of the objective of the business model in which a financial asset is held at a portfolio level because this best reflects the way the business is managed and information is provided to management. The information considered includes:

- the stated policies and objectives for the portfolio and the operation of those policies in practice. These include 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.

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

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

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

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

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

For the years ended December 31, 2021 and 2020

3. Significant Accounting Policies, Continued

(4) Financial instruments, continued

5) Subsequent measurement and gains and losses

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

6) 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.

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

7) interest rate indicator reform

If the standard for calculating contractual cash flows for financial assets or financial liabilities measured at amortized cost is changed as a result of the interest rate indicator reform, the Group will adjust the effective interest rate of the financial asset or financial liability to reflect the change required in the interest rate indicator reform. A change in the contractual cash flow calculation required by the interest rate reform is only when both of the following two conditions are met:

- Changes are necessary as a direct result of the reform of the interest rate indicator.
- The new standard for calculating contractual cash flows is economically equivalent to the previous standard (i.e the standard immediately before the change).

In the event of a change in financial assets or financial liabilities in addition to the change in the contractual cash flow calculation standard required in the interest rate indicator reform, the Group firstly considers the effective interest rate of the financial asset or financial liability in order to reflect the change required in the interest rate indicator reform. Then, for additional changes, the existing accounting policy will be applied.

For the years ended December 31, 2021 and 2020

3. Significant Accounting Policies, Continued

(4) Financial instruments, continued

8) 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.

(5) Derivatives

1) Derivative financial instruments and hedge accounting

The Group holds derivative financial instruments to hedge its foreign currency and interest rate risk exposures. Embedded derivatives are separated from the host contract and accounted for separately if the host contract is not a financial asset and certain criteria are met.

Derivatives are initially measured at fair value. Subsequent to initial recognition, derivatives are measured at fair value, and changes therein are generally recognized in profit or loss.

The Group designates certain derivatives as hedging instruments to hedge the variability in cash flows associated with highly probable forecast transactions arising from changes in foreign exchange rates and interest rates and certain derivatives and non-derivative financial liabilities as hedges of foreign exchange risk on a net investment in a foreign operation.

At inception of designated hedging relationships, the Group documents the risk management objective and strategy for undertaking the hedge. The Group also documents the economic relationship between the hedged item and the hedging instrument, including whether the changes in cash flows of the hedged item and hedging instrument are expected to offset each other.

For the years ended December 31, 2021 and 2020

3. Significant Accounting Policies, Continued

(4) Financial instruments, continued

2) Cash flow hedges

When a derivative is designated as a cash flow hedging instrument, the effective portion of changes in the fair value of the derivative is recognized in OCI and accumulated in the hedging reserve. The effective portion of changes in the fair value of the derivative that is recognized in OCI is limited to the cumulative change in fair value of the hedged item, determined on a present value basis, from inception of the hedge. Any ineffective portion of changes in the fair value of the derivative is recognized immediately in profit or loss.

The Group designates only the change in fair value of the spot element of forward exchange contracts as the hedging instrument in cash flow hedging relationships. The change in fair value of the forward element of forward exchange contracts ('forward points') is separately accounted for as a cost of hedging and recognized in a costs of hedging reserve within equity.

When the hedged forecast transaction subsequently results in the recognition of a non-financial item such as inventory, the amount accumulated in the hedging reserve and the cost of hedging reserve is included directly in the initial cost of the non-financial item when it is recognized.

For all other hedged forecast transactions, the amount accumulated in the hedging reserve and the cost of hedging reserve is reclassified to profit or loss in the same period or periods during which the hedged expected future cash flows affect profit or loss.

If the hedge no longer meets the criteria for hedge accounting or the hedging instrument is sold, expires, is terminated or is exercised, then hedge accounting is discontinued prospectively. When hedge accounting for cash flow hedges is discontinued, the amount that has been accumulated in the hedging reserve remains in equity until, for a hedge of a transaction resulting in the recognition of a non-financial item, it is included in the non-financial item's cost on its initial recognition or, for other cash flow hedges, it is reclassified to profit or loss in the same period or periods as the hedged expected future cash flows affect profit or loss.

If the hedged future cash flows are no longer expected to occur, then the amounts that have been accumulated in the hedging reserve and the cost of hedging reserve are immediately reclassified to profit or loss.

(6) Non-derivative financial liabilities

Financial liabilities are classified as measured at amortized cost or FVTPL. A financial liability is classified as at FVTPL if it is classified as held-for-trading, it is a derivative or it is designated as such on initial recognition. Financial liabilities at FVTPL are measured at fair value and net gains and losses, including any interest expense, are recognized in profit or loss. Other financial liabilities are subsequently measured at amortized cost using the effective interest method. Interest expense and foreign exchange gains and losses are recognized in profit or loss.

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

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

For the years ended December 31, 2021 and 2020

3. Significant Accounting Policies, Continued

(7) Share capital

Ordinary shares are classified as equity. Incremental costs directly attributable to the capital transactions are recognized as a deduction from equity, net of any tax effects.

Preference shares are classified as equity if it is non-redeemable, or redeemable only at the Group's option, and any dividends are discretionary. Dividends thereon are recognized as distributions within equity upon approval by the Group's shareholders.

When the Group repurchases its share capital, the amount of the consideration paid is recognized as a deduction from equity and classified as treasury shares. The profits or losses from the purchase, disposal, reissue, or retirement of treasury shares are not recognized as current profit or loss.

(8) Property, plant and equipment

1) Recognition and measurement

Items of property, plant and equipment are measured at cost, which includes capitalized borrowing costs, less accumulated depreciation and any accumulated impairment losses. The cost of certain items of property, plant and equipment at 1 January 2005, the Group's date of transition to IFRS, was determined with reference to its fair value at that date.

If significant parts of an item of property, plant and equipment have different useful lives, then they are accounted for as separate items (major components) of property, plant and equipment.

Any gain or loss on disposal of an item of property, plant and equipment is recognized in profit or loss.

2) Subsequent costs

Subsequent costs are recognized in the carrying amount of property, plant and equipment at cost or, if appropriate, as separate items if it is probable that future economic benefits associated with the item will flow to the Group and the cost of the item can be measured reliably

For the years ended December 31, 2021 and 2020

3. Significant Accounting Policies, Continued

(8) Property, plant and equipment, continued

3) Depreciation

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.

If the cost of a part of property, plant and equipment is significant compared to the cost of property, plant and equipment as a whole, and has a different useful life, that part of the cost should be accounted for as a separate item and is depreciated over its separate useful life.

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

	Useful lives (years)
Buildings	10 ~ 60
Structures	10 ~ 40
Machineries	5 ~ 10
Tools, furniture and fixtures	4 ~ 5
Vehicles	4 ~ 5

Depreciation methods, useful lives and residual values are reviewed at the end of each reporting date and adjusted, if appropriate. The change is accounted for as a change in an accounting estimate.

(9) Borrowing costs

The Group capitalizes borrowing costs directly attributable to the acquisition, construction or production of a qualifying asset as part of the cost of that asset. Other borrowing costs are recognized in expense as incurred. A qualifying asset is an asset that requires a substantial period of time to get ready for its intended use or sale. Financial assets and inventories that are manufactured or otherwise produced over a short period of time are not qualifying assets. Assets that are ready for their intended use or sale when acquired are not qualifying assets.

To the extent that the Group borrows funds specifically for the purpose of obtaining a qualifying asset, the Group determines the amount of borrowing costs eligible for capitalization as the actual borrowing costs incurred on that borrowing during the period less any investment income on the temporary investment of those borrowings. To the extent that the Group borrows funds generally and uses them for the purpose of obtaining a qualifying asset, the Group shall determine the amount of borrowing costs eligible for capitalization by applying a capitalization rate to the expenditures on that asset. The capitalization rate shall be the weighted average of the borrowing costs applicable to the borrowings of the Group that are outstanding during the period, other than borrowings made specifically for the purpose of obtaining a qualifying asset. The amount of borrowing costs that the Group capitalizes during a period shall not exceed the amount of borrowing costs incurred during that period.

For the years ended December 31, 2021 and 2020

3. Significant Accounting Policies, Continued

(10) 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:

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

Amortization periods and the amortization methods for intangible assets with finite useful lives are reviewed at each end of reporting period. If appropriate, the changes are accounted for as changes in accounting estimates.

Expenditures on research activities, undertaken with the prospect of gaining new scientific or technical knowledge and understanding, is recognized in profit or loss as incurred. Development expenditures are capitalized only if development costs can be measured reliably, the product or process is technically and commercially feasible, future economic benefits are probable, and the Group intends to and has sufficient resources to complete development and to use or sell the asset. Other development expenditures are recognized in profit or loss as incurred.

Subsequent expenditure is capitalized only when it increases the future economic benefits embodied in the specific asset to which it relates. All other expenditure, including expenditure on internally generated goodwill and brands, is recognized in profit or loss as incurred.

(11) Investment property

Property held for the purpose of earning rentals or benefiting from capital appreciation is classified as 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.

Subsequent costs are recognized in the carrying amount of investment property at cost or, if appropriate, as separate items if it is probable that future economic benefits associated with the item will flow to the Group and the cost of the item can be measured reliably. The carrying amount of the replaced part is derecognized. The costs of the day-to-day servicing are recognized in profit or loss as incurred.

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.

Depreciation methods, useful lives and residual values are reviewed at the end of each reporting date and adjusted, if appropriate. The change is accounted for as a change in an accounting estimate.

For the years ended December 31, 2021 and 2020

3. Significant Accounting Policies, Continued

(12) 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.

Inventories are measured at the lower of cost and net realizable value. Net realizable value is the estimated selling price in the ordinary course of business, less the estimated costs of completion and selling expenses. The amount of any write-down of inventories to net realizable value and all losses of inventories are recognized as an expense in the period the write-down or loss occurs. The amount of any reversal of any write-down of inventories, arising from an increase in net realizable value, are recognized as a reduction in the amount of inventories recognized as an expense in the period in which the reversal occurs.

(13) 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.

When determining whether the credit risk of a financial asset has increased significantly since initial recognition and when estimating ECLs, the Group considers reasonable and supportable information that is relevant and available without undue cost or effort. This includes both quantitative and qualitative information and analysis, based on the Group's historical experience and informed credit assessment and including forward-looking information.

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.

Lifetime ECLs are the ECLs that result from all possible default events over the expected life of a financial instrument. 12-month ECLs are the portion of ECLs that result from default events that are possible within the 12 months after the reporting date (or a shorter period if the expected life of the instrument is less than 12 months). The maximum period considered when estimating ECLs is the maximum contractual period over which the Group is exposed to credit risk.

For the years ended December 31, 2021 and 2020

3. Significant Accounting Policies, Continued

(13) Impairment, continued

1) Impairment of financial assets, continued

① Measurement of ECLs

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

ECLs are discounted at the effective interest rate of the financial asset.

② 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.

③ 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.

④ 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. For individual customers, the Group has a policy of writing off the gross carrying amount when the financial asset is 180 days past due based on historical experience of recoveries of similar assets. For corporate customers, the Group individually makes an assessment with respect to the timing and amount of write-off based on whether there is a reasonable expectation of recovery. 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.

For the years ended December 31, 2021 and 2020

3. Significant Accounting Policies, Continued

(13) Impairment, continued

2) Impairment of non-financial assets

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

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

An impairment loss is recognized if the carrying amount of an asset or its CGU exceeds its estimated recoverable amount. Impairment losses are recognized in profit or loss.

Goodwill acquired in a business combination is allocated to each CGU that is expected to benefit from the synergies arising from the goodwill acquired. Any impairment identified at the CGU level will first reduce the carrying value of goodwill and then be used to reduce the carrying amount of the other assets in the CGU on a pro rata basis. Except for impairment losses in respect of goodwill which are never reversed, an impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortization, if no impairment loss had been recognized.

(14) Employee benefits

1) Short-term employee benefits

Short-term employee benefits are employee benefits that are due to be settled within 12 months after the end of the period in which the employees render the related service. When an employee has rendered service to the Group during an accounting period, the Group recognizes the undiscounted amount of short-term employee benefits expected to be paid in exchange for that service.

2) Other long-term employee benefits

Other long-term employee benefits include employee benefits that are settled beyond 12 months after the end of the period in which the employees render the related service, and are calculated at the present value of the amount of future benefit that employees have earned in return for their service in the current and prior periods, less the fair value of any related assets. The present value 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. Any actuarial gains and losses are recognized in profit or loss in the period in which they arise.

For the years ended December 31, 2021 and 2020

3. Significant Accounting Policies, Continued

(14) Employee benefits, continued

3) Defined contribution plans

When an employee has rendered service to the Group during a period, the Group recognizes the contribution payable to a defined contribution plan in exchange for that service as a liability (accrued expense), after deducting any contribution already paid. If the contribution already paid exceeds the contribution due for service before the end of the reporting period, the Group recognizes that excess as an asset (prepaid expense) to the extent that the prepayment will lead to a reduction in future payments or a cash refund.

4) Defined benefit plans

The Group's net obligation in respect of defined benefit plans is calculated by estimating the amount of future benefit and that benefit is discounted to determine its present value deducted by the fair value of plan assets.

The calculation is performed annually by an independent actuary using the projected unit credit method. When the fair value of plan assets exceeds the present value of the defined benefit obligation, the Group recognizes an asset, to the extent of the present value of any economic benefits available in the form of refunds from the plan or reduction in the future contributions to the plan.

Re-measurement of the net defined benefit liability comprise actuarial gains and losses, the return on plan assets excluding amounts included in net interest on the net defined benefit liability, and any change in the effect of the asset ceiling, excluding amounts included in net interest on the net defined benefit liability and recognized in other comprehensive income. The Group determines net interests on net defined benefit liability (asset) by multiplying discount rate determined at the beginning of the annual reporting period and considers changes in net defined benefit liability (asset) from contributions and benefit payments. Net interest costs and other costs relating to the defined benefit plan are recognized through profit or loss.

When the plan amendment or curtailment occurs, gains or losses on amendment or curtailment in benefits for the past service provided are recognized through profit or loss. The Group recognizes gain or loss on a settlement when the settlement of defined benefit plan occurs.

5) Termination benefits

The Group recognizes a liability and expense for termination benefits at the earlier of the period when the Group can no longer withdraw the offer of those benefits and the period when the Group recognizes costs for a restructuring. If benefits are payable more than 12 months after the reporting period, then they are discounted to their present value.

For the years ended December 31, 2021 and 2020

3. Significant Accounting Policies, Continued

(15) Provisions

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

The risks and uncertainties that inevitably surround many events and circumstances are taken into account in reaching the best estimate of a provision. Where the effect of the time value of money is material, provisions are determined at the present value of the expected future cash flows.

Where some or all of the expenditures required to settle a provision are expected to be reimbursed by another party, the reimbursement shall be recognized when, and only when, it is virtually certain that reimbursement will be received if the entity settles the obligation. The reimbursement shall be treated as a separate asset.

Provisions are reviewed at the end of each reporting period and adjusted to reflect the current best estimates. If it is no longer probable that an outflow of resources embodying economic benefits will be required to settle the obligation, the provision is reversed.

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

(16) 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. Revenue is recognized 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.

For the years ended December 31, 2021 and 2020

3. Significant Accounting Policies, Continued

(17) Government grants

Government grants are not recognized unless there is reasonable assurance that the Group will comply with the grant's conditions and that the grant will be received. 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.

(18) 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

Interest income or expense is recognized using the effective interest method. The 'effective interest rate' is the rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial instrument to:

- the gross carrying amount of the financial asset; or
- the amortized cost of the financial liability.

In calculating interest income and expense, the effective interest rate is applied to the gross carrying amount of the asset (when the asset is not credit-impaired) or to the amortized cost of the liability. However, for financial assets that have become credit-impaired subsequent to initial recognition, interest income is calculated by applying the effective interest rate to the amortized cost of the financial asset. If the asset is no longer credit-impaired, then the calculation of interest income reverts to the gross basis.

For the years ended December 31, 2021 and 2020

3. Significant Accounting Policies, Continued

(19) Income taxes

Income tax expense comprises current and deferred tax. It is recognized in profit or loss except to the extent that it relates to a business combination, or items recognized directly in equity or in OCI.

The Group has determined that interest and penalties related to income taxes, including uncertain tax treatments, do not meet the definition of income tax, and therefore accounted for them under K-IFRS No.1037 'Provision, Contingent Liability, Contingent Assets'.

1) Current tax

Current tax comprises the expected tax payable or receivable on the taxable income or loss for the year and any adjustment to the tax payable or receivable in respect of previous years. The amount of current tax payable or receivable is the best estimate of the tax amount expected to be paid or received that reflects uncertainty related to income taxes, if any. It is measured using tax rates enacted or substantively enacted at the reporting date. Current tax also includes any tax arising from dividends.

Current tax assets and liabilities are offset only if they meet all of the following conditions:

- Has a legally enforceable right to set off the recognized amount
- Intended to settle the liability at the same time as net or realizing the asset

2) Deferred tax

Deferred tax is recognized in respect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. Deferred tax is not recognized for:

- temporary differences on the initial recognition of assets or liabilities in a transaction that is not a business combination and that affects neither accounting nor taxable profit or loss;
- temporary differences related to investments in subsidiaries, associates and joint arrangements to the extent that the Group is able to control the timing of the reversal of the temporary differences and it is probable that they will not reverse in the foreseeable future; and
- taxable temporary differences arising on the initial recognition of goodwill.

Deferred tax assets are recognized for unused tax losses, unused tax credits and deductible temporary differences to the extent that it is probable that future taxable profits will be available against which they can be used. Future taxable profits are determined based on the reversal of relevant taxable temporary differences. If the amount of taxable temporary differences is insufficient to recognize a deferred tax asset in full, then future taxable profits, adjusted for reversals of existing temporary differences, are considered, based on the business plans for individual subsidiaries in the Group. Deferred tax assets are reviewed at each reporting date and are reduced to the extent that it is no longer probable that the related tax benefit will be realized; such reductions are reversed when the probability of future taxable profits improves.

Unrecognized deferred tax assets are reassessed at each reporting date and recognized to the extent that it has become probable that future taxable profits will be available against which they can be used.

Deferred tax is measured at the tax rates that are expected to be applied to temporary differences when they reverse, using tax rates enacted or substantively enacted at the reporting date.

The measurement of deferred tax reflects the tax consequences that would follow from the manner in which the Group expects, at the reporting date, to recover or settle the carrying amount of its assets and liabilities. For this purpose, the carrying amount of investment property measured at fair value is presumed to be recovered through sale, and the Group has not rebutted this presumption. Deferred tax assets and liabilities are offset only if certain criteria are met.

For the years ended December 31, 2021 and 2020

3. Significant Accounting Policies, Continued

(20) Earnings per share

The Group presents basic and diluted earnings per share (the "EPS") data for its ordinary shares. Basic EPS is calculated by dividing the profit or loss attributable to ordinary shareholders of the Parent Company by the weighted average number of ordinary shares outstanding during the period, adjusted for own shares held. Diluted EPS is determined by adjusting the profit or loss attributable to ordinary shareholders and the weighted average number of ordinary shares outstanding, adjusted for the effects of all dilutive potential ordinary shares, which comprise share options granted to employees.

(21) Operating segment

The Group has three reportable segments: the chemicals business segment, electronic materials business segment and energy and other business segment. Strategic operations 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.

(22) Non-current assets held-for-sale and discontinued operations

If the carrying amount of non-current assets held for sale or disposal group is highly probable to be recovered through sale other than from continuing operation, those assets are classified as non-current assets held for sale. The asset (or, disposal group) must be available for immediate sale and the sale is highly probable to be classified as held for sale. Immediately before the initial classification of the asset (or, disposal group) as held for sale, the carrying amount of the asset will be measured at the lower of carrying amount and fair value less costs to sell.

Any subsequent decrease in fair value less costs to sell of an asset, recognized impairment loss at the time of classification as held for sale, may result in an immediate charge to profit or loss and gain for any subsequent increase in fair value less costs to sell of an asset can be recognized in the profit or loss to the extent that it is not in excess of the cumulative impairment loss that has been recognized previously.

Non-current assets or disposal groups that are classified as held for sale are not depreciated.

A discontinued operation is a component of the Group's business that represents a separate major line of business or geographical area of operations that has been disposed of or is held for sale, or is a subsidiary acquired exclusively with a view to resale. When an operation is classified as a discontinued operation, the comparative consolidated statement of comprehensive income is re-presented as if the operation had been discontinued from the start of the comparative year.

For the years ended December 31, 2021 and 2020

3. Significant Accounting Policies, Continued

(23) Lease

At inception of a contract, the Group assesses whether a contract is, or contains, a lease. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period in exchange for consideration.

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 Group recognizes a right-of-use asset and a lease liability at the lease commencement date. The right-of-use asset is initially measured at cost, which comprise the initial amount of the lease liability adjusted for any lease payments made at or before the commencement date, plus any initial direct costs incurred and an estimate of costs to dismantle and remove the underlying asset or to restore the underlying asset or the site on which it is located, less any lease incentives received.

The right-of-use asset is subsequently depreciated using the straight-line method from the commencement date to the end of the lease term, unless the lease transfers ownership of the underlying asset to the Group by the end of the lease term or the cost of the right-of-use asset reflects that the Group will exercise a purchase option. In that case the right-of-use asset will be depreciated over the useful life of the underlying asset, which is determined on the same basis as those of property and equipment. In addition, the right-of-use asset is periodically reduced by impairment losses, if any, and adjusted for certain remeasurements of the lease liability. 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. Generally, the Group uses its incremental borrowing rate as the discount rate.

Lease payments included in the measurement of the lease liability comprise the following:

- fixed payments, including in-substance fixed payments;
- variable lease payments that depend on an index or a rate, initially measured using the index or rate as at the commencement date;
- amounts expected to be payable under a residual value guarantee; and
- the exercise price under a purchase option that the Group is reasonably certain to exercise, lease payments in an optional renewal period if the Group is reasonably certain to exercise an extension option, and penalties for early termination of a lease unless the Group is reasonably certain not to terminate early.

The lease liability is measured at amortized cost using the effective interest method. It is remeasured when there is a change in future lease payments arising from a change in an index or rate, if there is a change in the Group's estimate of the amount expected to be payable under a residual value guarantee, if the Group changes its assessment of whether it will exercise a purchase, extension or termination option or if there is a revised in-substance fixed lease payment. When the lease liability is remeasured in this way, a corresponding adjustment is made to the carrying amount of the right-of-use asset, or is recorded in profit or loss if the carrying amount of the right-of-use asset has been reduced to zero.

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 recognizes 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.

For the years ended December 31, 2021 and 2020

3. Significant Accounting Policies, Continued

(23) Lease, continued

2) As a lessor

At inception 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 their relative stand-alone prices. 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. If this is the case, then the lease is a finance lease; if not, then it is an operating lease. 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.

(24) Emissions Rights

The Company accounts for greenhouse gases emission right and the relevant liability as below pursuant to the Act on Allocation and Trading of Greenhouse Gas Emission which became effective in 2015.

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. The cost includes any directly attributable costs incurred during the normal course of business.

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. 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 Company 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 liability is a present obligation of submitting emission rights to the government with regard to emission of greenhouse gas. Emission liability is recognized when it is probable that outflows of resources will be required to settle the obligation and the costs required to perform the obligation are reliably estimable. Emission liability is an amount of estimated obligations for emission rights to be submitted to the government for the performing period. The emission liability is measured based on the expected quantity of emission for the performing period in excess of emission allowance in possession and the unit price for such emission rights in the market at the end of the reporting period.

For the years ended December 31, 2021 and 2020

3. Significant Accounting Policies, Continued

(25) New standards and interpretations not yet adopted

The following new standards have been published but are not mandatory for the Group for annual period beginning on January 1, 2021, and the Group has not early adopted them.

- K-IFRS 1037 'Contract at a loss' - the amount of the costs incurred to fulfil a contract
- K-IFRS 1012 'Corporate Tax' - Deferred tax on assets and liabilities arising from a single transaction

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

- Exemption/discount/ deferment of rental fees related to COVID-19 for a period exceeding June 30, 2021 (K-IFRS No. 1116 'Lease')
- Refer to the conceptual framework (K-IFRS No. 1103 'Business Combination')
- K-IFRS Annual Improvement 2018-2020
- Amount of sale before intended use (K-IFRS No. 1016 'tangible assets')
- Current/non-current classification of liabilities (K-IFRS No. 1001 'Financial statement presentation')
- K-IFRS No. 1117 'Insurance contract' and its amendments - Disclosure of accounting policies (K-IFRS No. 1001 'Presentation of financial statements')
- Definition of accounting estimate (K-IFRS No. 1008 'Accounting Policy, Changes in Accounting Estimates and Errors')

For the years ended December 31, 2021 and 2020

4. 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 customers on a regular basis.

The Group sets allowances for estimated losses from accounts receivable and investment 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.

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, 2021 and 2020 is summarized as follows:

<i>(In thousands of won)</i>	<u>2021</u>	<u>2020</u>
Cash and cash equivalents	₩ 2,324,218,667	1,544,258,301
Trade and other receivables, net	2,094,325,582	1,799,188,738
Government bonds	929,235	809,155
Non-derivative financial instruments	107,106,337	124,508,998
Guarantee deposits	96,436,145	119,987,256
Total	₩ <u>4,623,015,966</u>	<u>3,588,752,448</u>

The maximum exposure to credit risk for trade and other receivables at the reporting date by geographic region as of December 31, 2021 and 2020 is as follows:

<i>(In thousands of won)</i>	<u>2021</u>	<u>2020</u>
Domestic	163,639,065	168,699,984
Europe	₩ 882,717,688	732,347,950
North America	480,414,619	270,057,753
China	408,895,668	420,322,837
Other	158,658,542	207,760,214
Total	₩ <u>2,094,325,582</u>	<u>1,799,190,758</u>

For the years ended December 31, 2021 and 2020

4. 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, 2021 and 2020 are as follows:

(In thousands of won)	2021		2020	
	Gross	Impairment	Gross	Impairment
Not overdue	₩ 2,080,585,677	-	1,779,394,244	-
Past due 1-30 days	13,541,609	-	19,049,101	-
Past due 31-60 days	165,581	339	620,713	-
Past due over 61 days	162,690	129,636	124,680	62,204
Total	₩ 2,094,455,557	129,975	1,799,250,942	62,204

(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, 2021 is as follows:

(In thousands of won)	Carrying amount	Contractual Cash flow	More than 1 year and less than		
			1 Year or less	5 years	More than 5 years
Trade and other payable	₩ 3,174,693,844	3,176,451,461	2,908,884,127	262,123,346	5,443,988
Short-term borrowings	2,510,216,803	2,611,171,531	2,611,171,531	-	-
Long-term borrowings	2,107,760,803	2,151,643,335	16,658,584	2,134,984,751	-
Derivative financial liabilities	12,346,936	12,346,936	2,330,250	10,016,686	-
Total	₩ 7,805,018,386	7,951,613,263	5,539,044,492	2,407,124,783	5,443,988

(*)Trade and other payable includes cash flows related to lease liabilities. More details are included in Note 30 Lease.

For the years ended December 31, 2021 and 2020

4. 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 EUR, USD, JPY and etc. The Group manages the exchange rate risk through currency forward transactions as considered necessary in order to hedge the exchange risk.

Carrying amounts of monetary assets and liabilities expressed as other than functional currency as of December 31, 2021 and 2020 are as follows:

		2021			2020		
		USD	EUR	JPY, etc.	USD	EUR	JPY, etc.
<i>(In thousands of won)</i>							
Financial assets :							
Cash and cash equivalents	₩	337,710,380	1,077,405	143,991,575	148,574,228	48,131	126,434,074
Trade and other receivables		2,777,183,951	188,707,468	284,664,418	2,054,219,549	184,959,630	276,929,227
Other investments		5,571,270	-	1,036,430	180,416	-	786,399
Total	₩	<u>3,120,465,601</u>	<u>189,784,873</u>	<u>429,692,423</u>	<u>2,202,974,193</u>	<u>185,007,761</u>	<u>404,149,700</u>
Financial liabilities:							
Trade and other payables	₩	2,285,161,842	15,490,732	240,274,135	1,535,338,728	15,903,836	180,173,076
Borrowings		<u>1,574,894,769</u>	<u>124,816,629</u>	<u>232,892,682</u>	<u>1,156,159,895</u>	<u>144,278,655</u>	<u>207,507,903</u>
Total	₩	<u>3,860,056,611</u>	<u>140,307,361</u>	<u>473,166,817</u>	<u>2,691,498,623</u>	<u>160,182,491</u>	<u>387,680,979</u>

The following exchange rates were applied during the years ended December 31, 2021 and 2020:

Currency		Average rate		Reporting date spot rate	
		2021	2020	2021	2020
USD	₩	1,143.89	1,180.55	1,185.50	1,088.00
EUR		1,353.19	1,345.53	1,342.34	1,338.24
JPY		10.42	11.05	10.30	10.54

Effects on income (loss) after income taxes as a result of change in exchange rate as of December 31, 2021 and 2020 are as follows:

Currency		2021		2020	
		If increased by 5%	If decreased by 5%	If increased by 5%	If decreased by 5%
USD	₩	(28,030,499)	28,030,499	(18,515,076)	18,515,076
EUR		1,875,198	(1,875,198)	940,878	(940,878)
JPY, etc.		(1,647,680)	1,647,680	624,165	(624,165)

For the years ended December 31, 2021 and 2020

4. Financial Risk Management, Continued

(3) Market risk, continued

2) Interest rate risk

The Group entered interest rate swaps contracts in order to hedge the interest rate fluctuation risk for certain borrowings.

(i) The interest rate profile of the Group's interest-bearing financial instruments as of December 31, 2021 and 2020 is summarized as follows:

<i>(In thousands of won)</i>		<u>2021</u>	<u>2020</u>
Fixed interest rate:			
Short-term borrowings	₩	1,435,628,723	1,272,988,810
Long-term borrowings		<u>421,113,471</u>	<u>219,626,913</u>
Sub-total		<u>1,856,742,194</u>	<u>1,492,615,723</u>
Variable interest rate:			
Short-term borrowings	₩	1,074,588,080	1,154,515,370
Long-term borrowings		<u>1,686,647,332</u>	<u>1,264,692,692</u>
Sub-total		<u>2,761,235,412</u>	<u>2,419,208,062</u>
Total	₩	<u>4,617,977,606</u>	<u>3,911,823,785</u>

(ii) Fair value sensitivity analysis for fixed rate instruments

Debentures and borrowings at amortized cost bear fixed interest rates. Therefore, change in interest rates at the reporting date would not affect the Group's profit or loss.

(iii) 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, 2021 and 2020.

<i>(In thousands of won)</i>		<u>2021</u>		<u>2020</u>	
		<u>If increased by 1%</u>	<u>If decreased by 1%</u>	<u>If increased by 1%</u>	<u>If decreased by 1%</u>
Variable rate instruments	₩	(20,930,164)	20,930,164	(18,337,597)	18,337,597

For the years ended December 31, 2021 and 2020

4. Financial Risk Management, Continued

(3) Market risk, continued

3) Other market price risk

Market price risk arises from the listed equity instruments 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 sale decisions.

The effect on other comprehensive income (gains/losses on valuation of FVOCI equity instruments, when the price of listed equity financial assets that the Group possesses, changed by five percent points as of December 31, 2021 is as follows:

(In thousands of won)

		<u>If increased by 5%</u>	<u>If decreased by 5%</u>
Total comprehensive income, net of tax effect	₩	49,392,216	(49,392,216)

(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)

		<u>2021</u>	<u>2020</u>
Debt to equity ratio:			
Total liabilities	₩	10,636,493,682	8,175,305,379
Total equity		<u>15,196,699,315</u>	<u>13,358,926,888</u>
Debt to equity ratio		<u>69.99%</u>	<u>61.20%</u>
Net borrowings to equity ratio:			
Borrowings	₩	4,617,977,606	3,911,823,785
Less : Cash and cash equivalents		(2,325,692,348)	(1,545,974,322)
Less : Short-term financial instruments		<u>(107,066,897)</u>	<u>(122,740,000)</u>
Net borrowings		<u>2,185,218,361</u>	<u>2,243,109,463</u>
Net borrowings to equity ratio		<u>14.38%</u>	<u>16.79%</u>

For the years ended December 31, 2021 and 2020

4. 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, 2021 and 2020 are summarized as follows:

(In thousands of won)	2021		2020	
	Carrying amount	Fair value	Carrying amount	Fair value
Financial assets:				
Assets carried at fair value				
Equity Instruments	₩ 1,532,479,758	1,532,479,758	1,280,416,008	1,280,416,008
Derivative financial assets	98,070,353	98,070,353	80,646,819	80,646,819
Subtotal	1,630,550,111	1,630,550,111	1,361,062,827	1,361,062,827
Cash and cash equivalents	2,325,692,348	2,325,692,348	1,545,974,322	1,545,974,322
Trade receivables and other receivables	2,094,325,582	2,094,325,582	1,799,188,738	1,799,188,738
Government bonds	929,235	929,235	809,155	809,155
Financial instruments	107,106,337	107,106,337	124,508,998	124,508,998
Guarantee deposits	96,436,145	96,436,145	119,987,256	119,987,256
Sub-total	4,624,489,647	4,624,489,647	3,590,468,469	3,590,468,469
Total financial assets	₩ 6,255,039,758	6,255,039,758	4,951,531,296	4,951,531,296
Financial liabilities:				
Liabilities carried at fair value				
Derivative financial liabilities	₩ 12,346,936	12,346,936	28,783,094	28,783,094
Liabilities carried at amortized cost				
Borrowings	4,617,977,606	4,614,566,108	3,911,823,785	3,890,403,169
Trade and other payables(*)	3,174,693,844	3,174,693,844	1,821,627,977	1,821,627,977
Sub-total	7,792,671,450	7,789,259,952	5,733,451,762	5,712,031,146
Total financial liabilities	₩ 7,805,018,386	7,801,606,888	5,762,234,856	5,740,814,240

(*) Includes lease liabilities.

2) Interest rates used for determining fair value

The interest rates used to discount estimated cash flows, when applicable, are based on the treasury bond yield curve at the reporting date plus an adequate credit spread, and were as follows:

	2021	2020
Borrowings	2.37%	1.33%

For the years ended December 31, 2021 and 2020

4. Financial Risk Management, Continued

(5) Fair values, continued

3) 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 composed of listed equity securities that are classified as available-for-sale 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”. “Level 2” consists of currency swap agreement which is classified as derivatives. 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.

These unlisted equity securities and derivatives 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	Discount rate	The estimated fair value would increase(decrease) if the discount rates were lower(higher).

For the years ended December 31, 2021 and 2020

4. Financial Risk Management, Continued

(5) Fair values, continued

The fair values of financial instruments based on the fair value hierarchy as of December 31, 2021 and 2020 are summarized as follows:

<i>(In thousands of won)</i>	<u>Level 1</u>	<u>Level 2</u>	<u>Level 3</u>	<u>Total</u>
December 31, 2021:				
Financial assets				
Equity instruments	₩ 1,303,224,702	-	229,255,056	1,532,479,758
Derivative assets	-	98,070,353	-	98,070,353
Financial liabilities				
Derivative liabilities	-	12,346,936	-	12,346,936
December 31, 2020:				
Financial assets				
Equity Instruments	992,149,205	-	288,266,803	1,280,416,008
Derivative assets	-	80,646,819	-	80,646,819
Financial liabilities				
Derivative liabilities	-	28,783,094	-	28,783,094

(6) Transfer of financial assets and others

The list of transferred financial assets which are not derecognized in the statement of financial position as of December 31, 2021 and 2020 is as follows:

<i>(In thousands of won)</i>	<u>Trade receivables</u>	
	<u>2021</u>	<u>2020</u>
Carrying amount of assets	₩ 1,393,463,188	831,105,393
Carrying amount of associated liabilities	1,393,463,188	831,105,393

For the years ended December 31, 2021 and 2020

5. Segments Information

(1) Operating segments

1) The Group has three reportable segments, which are summarized as follows:

<u>Segment</u>	<u>Main business</u>
Energy solutions	Rechargeable lithium-ion batteries and other businesses
Electronic material	Semi-conductor and display materials

2) The operating segments of the consolidated group are decided by management, responsible 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. The Group has two reportable segments which offer different products and services. The following table provides information for each reportable segment for the years ended December 31, 2021 and 2020.

(i) 2021

<i>(In thousands of won)</i>		<u>Revenues</u>	<u>Depreciation</u>	<u>Amortization</u>	<u>Operating profit</u>
Energy solutions	₩	10,946,907,576	1,074,636,503	53,383,590	537,589,582
Electronic material		<u>2,606,312,673</u>	<u>98,481,482</u>	<u>25,662,178</u>	<u>529,986,018</u>
Total	₩	<u>13,553,220,249</u>	<u>1,173,117,985</u>	<u>79,045,768</u>	<u>1,067,575,600</u>

(ii) 2020

<i>(In thousands of won)</i>		<u>Revenues</u>	<u>Depreciation</u>	<u>Amortization</u>	<u>Operating profit</u>
Energy solutions	₩	8,728,773,927	882,823,180	54,966,872	241,291,792
Electronic material		<u>2,565,996,519</u>	<u>102,334,971</u>	<u>43,363,100</u>	<u>430,043,566</u>
Total	₩	<u>11,294,770,446</u>	<u>985,158,151</u>	<u>98,329,972</u>	<u>671,335,358</u>

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

3) As of December 31, 2021, contract liabilities resulting from contracts with customers amounted to ₩234,679 million, and the amount of contract liabilities that is recognized as revenue for the year ended December 31, 2021 was ₩320,035 million.

For the years ended December 31, 2021 and 2020

5. Segments Information, Continued

(2) Geographical information

The Group operates in global markets such as Korea (the Parent Company's domicile), North America, Europe, China, Southeast Asia, and so on. The following table provides information for each geographical region as of and for the years ended December 31, 2021 and 2020.

(In thousands of won)

	2021		2020	
	Revenue(*1)	Non-current assets(*2)	Revenue(*1)	Non-current assets(*2)
Korea	₩ 980,570,569	2,973,798,815	1,133,944,394	3,267,462,378
North America	2,890,401,325	55,592,928	1,446,763,173	55,411,539
Europe	4,884,677,983	3,744,385,067	3,815,851,734	2,352,977,887
China	3,164,771,187	2,135,061,707	2,916,821,319	1,727,808,808
Southeast Asia and etc.	1,632,799,185	420,139,094	1,981,389,826	265,340,444
Consolidation adjustments	-	(743,660,774)	-	(596,826,449)
Total	₩ 13,553,220,249	8,585,316,837	11,294,770,446	7,072,174,607

(*1) As described in Note 31, the Group's related party transactions comprise more than 10% of the Group's consolidated revenue.

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

6. Cash and Cash Equivalents

Cash and cash equivalents as of December 31, 2021 and 2020 are summarized as follows:

(In thousands of won)

	2021	2020
Cash on hand	₩ 1,473,681	1,716,021
Demand deposits	1,073,514,437	817,866,287
Short-term investments	1,250,704,230	726,392,014
Total	₩ 2,325,692,348	1,545,974,322

For the years ended December 31, 2021 and 2020

7. Trade and Other Receivables

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

<i>(In thousands of won)</i>	2021		2020	
	Current	Non-current	Current	Non-current
Loans	₩ 5,986,570	13,523,119	492,895	25,273,396
Present value discount	-	(23,836)	-	(48,770)
Other account receivables	126,671,970	38,765	117,245,014	48,456
Allowance	(11,285)	-	-	-
Accrued income	2,477,703	-	34,556,957	-
VAT receivables	114,638,065	-	96,471,904	-
Trade account receivable (receivables)	1,945,781,266	-	1,605,720,681	6,407
Trade account receivable (contract assets)	-	-	15,955,906	-
Allowance	(118,690)	-	(62,204)	-
Total	₩ 2,195,425,599	13,538,048	1,870,381,153	25,279,489

(2) Changes in allowance for trade and other receivables for the years ended December 31, 2021 and 2020 are summarized as follows:

<i>(In thousands of won)</i>	2021		2020	
	Current		Current	
Balance at beginning	₩	62,204		1,872,493
Write-off		(1,417)		(280,177)
(Reversal of) Bad debt expense		155,706		(1,618,068)
Exchange rate fluctuation		(86,518)		87,956
Balance at ending	₩	129,975		62,204

8. Inventories

(1) Inventories as of December 31, 2021 and 2020 are summarized as follows:

1) 2021

<i>(In thousands of won)</i>	Acquisition cost	Allowance for valuation	Carrying amount
Finished goods	₩ 701,032,354	(34,841,239)	666,191,115
Semi-finished goods	821,049,869	(16,714,543)	804,335,326
Raw materials	714,079,501	(12,057,548)	702,021,953
Supplies	45,161,473	-	45,161,473
Materials-in-transit	268,087,306	-	268,087,306
Other inventories	1,519,146	-	1,519,146
Total	₩ 2,550,929,649	(63,613,330)	2,487,316,319

For the years ended December 31, 2021 and 2020

8. Inventories, Continued

(1) Inventories as of December 31, 2021 and 2020 are summarized as follows, continued:

2) 2020

<i>(In thousands of won)</i>	<u>Acquisition cost</u>	<u>Allowance for valuation</u>	<u>Book value</u>
Merchandise	₩ 257,346	-	257,346
Finished goods	488,382,099	(14,032,590)	474,349,509
Semi-finished goods	628,602,776	(20,519,854)	608,082,922
Raw materials	462,253,532	(10,317,035)	451,936,497
Supplies	31,821,675	-	31,821,675
Materials-in-transit	244,248,270	-	244,248,270
Other inventories	89,042	-	89,042
Total	₩ <u>1,855,654,740</u>	<u>(44,869,479)</u>	<u>1,810,785,261</u>

(2) The amount of inventories expensed as cost of sales and loss on valuation of inventories for the years ended December 31, 2021 and 2020 is as follows:

<i>(In thousands of won)</i>	<u>2021</u>	<u>2020</u>
Inventories recognized as cost of sales	₩ 10,458,192,411	8,963,909,914
Valuation loss on inventories (reversal)	17,409,658	(49,692,481)
Total	₩ <u>10,475,602,069</u>	<u>8,914,217,433</u>

9. Other Investments

(1) Other investments as of December 31, 2021 and 2020 are summarized as follows:

<i>(In thousands of won)</i>	<u>2021</u>		<u>2020</u>	
	<u>Current</u>	<u>Non-current</u>	<u>Current</u>	<u>Non-current</u>
Government bonds	₩ 704,700	224,535	-	809,155
Equity instruments	-	1,532,479,758	-	1,280,416,008
Financial instruments	107,066,897	39,440	122,740,000	1,768,998
Guarantee deposits	56,769,762	39,666,383	44,297,270	75,689,986
Total	₩ <u>164,541,359</u>	<u>1,572,410,116</u>	<u>167,037,270</u>	<u>1,358,684,147</u>

For the years ended December 31, 2021 and 2020

9. Other Investments, Continued

(2) Details of equity instruments as assets as of December 31, 2021 and 2020 are summarized as follows:

(In thousands of won)

	Acquisition cost	Unrealized gain (loss)			Carrying amount
		Beginning balance	Changes in unrealized gain or loss	Ending balance	
December 31, 2021					
FVOCI					
Listed equity instruments	₩ 732,430,101	263,768,228	307,026,373	570,794,601	1,303,224,702
Unlisted equity instruments	18,658,588	28,916,814	5,511,688	34,428,502	53,087,090
Tax effect		(70,829,781)	(75,634,211)	(146,463,992)	
FVTPL					
Unlisted equity instruments	33,115,500	43,700,288	99,352,178	143,052,466	176,167,966
Total	₩ 784,204,189	336,385,330	411,890,239	748,275,569	1,532,479,758
December 31, 2020					
FVOCI					
Listed equity instruments	₩ 728,380,978	198,112,542	65,655,686	263,768,228	992,149,206
Unlisted equity instruments	18,673,588	20,758,142	8,158,672	28,916,814	47,590,402
Tax effect		(52,966,706)	(17,863,075)	(70,829,781)	
FVTPL					
Unlisted equity instruments	136,041,325	87,349,185	17,285,890	104,635,075	240,676,400
Total	₩ 883,095,891	306,219,869	91,100,248	397,320,117	1,280,416,008

(*) During the current period, all equity securities of Hanwha Total Petrochemicals Co., Ltd. held by the Group were disposed, and a disposal gain of ₩29,256 million was recognized in profit or loss.

For the years ended December 31, 2021 and 2020

10. Other Current Assets and Non-current Assets

Other current and non-current assets as of December 31, 2021 and 2020 are summarized as follows:

		2021		2020	
		Current	Non-current	Current	Non-current
<i>(In thousands of won)</i>					
Advance payments	₩	150,027,322	8,507,317	169,921,924	36,148,017
Prepaid expenses		105,728,714	97,377,424	82,518,502	70,481,866
Prepaid income tax		2,952,073	-	3,955,512	-
Total	₩	258,708,109	105,884,741	256,395,938	106,629,883

11. Equity-accounted Investees

(1) The equity-accounted investees of the Group as of December 31, 2021 and 2020 are summarized as follows:

Associates:	Country	Primary business	2021		2020	
			Percentage of ownership	Carrying amount	Percentage of ownership	Carrying amount
Samsung Display Ltd. ("SDC") (*1)	Korea	Manufacturing and sale of LCD, OLED	15.22%	7,765,314,543	15.22%	7,045,372,622
Samsung Global Research ("SERI") (*2) (Samsung Economic Research Institute Ltd.)	Korea	Management advisory consulting	29.60%	26,146,557	29.60%	23,586,914
Intellectual Keystone Technology ("IKT")	U.S.A	Investing in new technology	41.00%	11,180,577	41.00%	12,702,753
Sungrow-Samsung SDI Energy Storage Power Supply Co., Ltd. ("SEST") (*3,4)(formerly, SSEP)	China	Manufacturing ESS products	13.00%	19,533,878	35.00%	10,808,613
Samsung SDI-Sungrow Energy Storage Battery Co., Ltd. ("SSEB")(*3)	China	Manufacturing ESS products	35.00%	-	35.00%	8,142,457
SD Flex Co., Ltd.	Korea	Manufacturing printed-circuit board	50.00%	13,306,754	50.00%	14,191,946
ECOPRO EM Co, Ltd.(*5)	Korea	Anode material manufacturing	40.01%	44,457,379	40.01%	23,777,032
Philenergy Co., Ltd.	Korea	Stack	20.00%	4,814,612	20.00%	4,814,612
Secondary Battery growth Fund (*6)	Korea	Equipment Investing in secondary battery R&D	33.30%	670,000	0.00%	-
Total				₩ 7,885,424,300		₩ 7,143,396,949

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

(*2) Samsung Economic Research Institute changed its name to Samsung Global Research during the current year.

(*3) During the current year, SSEB was merged by SEST (formerly, SSEP).

For the years ended December 31, 2021 and 2020

11. Equity-accounted Investees, Continued

(*4) Sungrow-Samsung SDI Energy Storage Power Supply Co., Ltd. ("SSEP") changed its name to Sungrow Energy Storage Technology Co., Ltd. ("SEST") during the current year, and its stake decreased from 35% to 13% due to unequal capital increase. However, this investment was classified as investments in associates as the Group can exercise significant influence through its right to appoint a member of the board of directors of SEST even though the Group has less than 20% of equity interests.

(*5) The carrying amount has changed due to an additional investment of ~~₩~~24,000 million during the year ended on December 31, 2021.

(*6) A new investment of ~~₩~~670 million was made during the year ended on December 31, 2021.

Fiscal year of equity-method accounted investees ended on December 31, 2021.

For the years ended December 31, 2021 and 2020

11. Equity-accounted Investees, Continued

(2) The summarized financial information of equity-accounted investees as of and for the years ended December 31, 2021 and 2020 is summarized as follows:

1) 2021

<i>(In thousands of won)</i>	SDC	Samsung Global Research(form erly, SERI)	IKT	SEST
Current assets	₩ 35,220,984,652	107,199,582	20,215,987	455,628,828
Non-current assets	24,773,119,538	67,202,194	7,053,713	29,741,257
Current liabilities	7,539,402,392	69,704,639	-	332,782,938
Non-current liabilities	1,359,478,868	16,364,175	-	2,974,450
Revenue	31,557,504,085	191,460,964	303,130	255,424,717
Operating profit (loss)	4,364,684,967	(215,142)	(5,881,210)	16,793,626
Net income (loss)	3,511,314,245	164,222	(6,261,305)	13,752,800
Other comprehensive income (loss)	1,256,902,356	8,338,754	-	-
Total comprehensive income (loss)	4,768,216,601	8,502,976	(6,261,305)	13,752,800

<i>(In thousands of won)</i>	SDFLEX	ECOPROEM	Philenergy	Secondary Battery Growth Fund.
Current assets	₩ 22,380,729	95,255,053	111,661,027	2,010,000
Non-current assets	7,514,683	177,072,347	9,228,338	-
Current liabilities	2,520,218	98,178,418	81,611,700	-
Non-current liabilities	761,686	64,736,571	17,260,568	-
Revenue	22,402,547	11,859,340	165,151,952	-
Operating profit (loss)	4,673,351	(9,942,474)	6,846,864	-
Net income (loss)	4,221,597	(9,904,097)	7,366,419	-
Total comprehensive income (loss)	4,221,597	(9,904,097)	7,366,419	-
Dividends received	3,000,000	-	-	-

For the years ended December 31, 2021 and 2020

11. Equity-accounted Investees, Continued

2) 2020

<i>(In thousands of won)</i>	<u>SDC</u>	<u>Samsung Global Research(form erly, SERI)</u>	<u>IKT</u>	<u>SEST</u>
Current assets	₩ 28,354,912,822	88,346,473	19,041,589	166,473,064
Non-current assets	26,904,628,514	55,537,797	11,940,736	24,683,595
Current liabilities	7,631,557,348	48,288,234	-	157,561,613
Non-current liabilities	841,324,613	15,910,517	-	2,713,294
Revenue	30,474,830,020	164,358,099	614,867	156,524,479
Operating profit (loss)	2,144,148,754	(572,551)	936,303	15,164,513
Net income (loss)	1,874,487,637	285,974	936,303	13,803,669
Other comprehensive income (loss)	408,021,492	(245,257)	-	-
	2,282,509,129	40,717	936,303	13,803,669
<i>(In thousands of won)</i>	<u>SSEB</u>	<u>SDFLEX</u>	<u>ECOPROEM</u>	<u>Philenergy</u>
Current assets	₩ 18,561,087	25,232,807	35,940,223	110,318,129
Non-current assets	13,324,769	7,636,400	28,654,165	1,938,162
Current liabilities	6,972,769	4,485,315	4,761,762	90,317,414
Non-current liabilities	1,648,924	-	409,240	7,000,000
Revenue	49,156,201	38,638,528	-	17,430,907
Operating profit (loss)	2,424,768	10,446,780	(646,213)	(2,979,291)
Net income (loss)	2,433,230	7,423,244	(556,832)	(2,890,674)
Total comprehensive income (loss)	2,433,230	7,423,244	(556,832)	(2,890,674)
Dividends received	-	1,500,000	-	-

For the years ended December 31, 2021 and 2020

11. Equity-accounted Investees, 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, 2021 and 2020 is summarized as follows:

1) 2021

<i>(In thousands of won)</i>		SDC	Samsung Global Research(formerly, SERI)	IKT	SEST
Net assets (a)(*)	₩	51,020,463,491	88,332,963	27,269,700	150,260,600
Percentage of ownership (b)		15.2%	29.6%	41.0%	13.0%
Equity to net assets (axb)		7,765,314,543	26,146,557	11,180,577	19,533,878
Carrying amount	₩	7,765,314,543	26,146,557	11,180,577	19,533,878

<i>(In thousands of won)</i>		SDFLEX	ECOPROEM	Philenergy	Secondary Battery Growth Fund
Net assets (a)(*)	₩	26,613,508	111,107,560	24,073,059	2,010,000
Percentage of ownership (b)		50.0%	40.0%	20.0%	33.3%
Equity to net assets (axb)		13,306,754	44,457,379	2,987,775	670,000
Difference of Investments		-	-	1,826,837	-
Carrying amount	₩	13,306,754	44,457,379	4,814,612	670,000

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

2) 2020

<i>(In thousands of won)</i>		SDC	SERI	IKT	SSEP
Net assets (a)(*)	₩	46,290,227,480	79,685,519	30,982,325	30,881,752
Percentage of ownership (b)		15.20%	29.60%	41.00%	35.00%
Equity to net assets (axb)		7,045,372,622	23,586,914	12,702,753	10,808,613
Carrying amount	₩	7,045,372,622	23,586,914	12,702,753	10,808,613

<i>(In thousands of won)</i>		SSEB	SDFLEX	ECOPROEM	Philenergy
Net assets (a)(*)	₩	23,264,164	28,383,892	59,423,385	14,938,877
Percentage of ownership (b)		35.00%	50.00%	40.00%	20.00%
Equity to net assets (axb)		8,142,457	14,191,946	23,777,031	2,987,775
Difference of Investments		-	-	-	1,826,837
Carrying amount	₩	8,142,457	14,191,946	23,777,031	4,814,612

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

For the years ended December 31, 2021 and 2020

11. Equity-accounted Investees, Continued

(4) Changes in investments in equity-accounted investees for the years ended December 31, 2021 and 2020 are as follows:

1) 2021

(In thousands of won)

Company	January 1, 2021	Acquisition	Share of profits (loss)	Other capital movements	Gain (Loss) on disposal of equity method investment	Removal of dividends	December 31, 2021
SDC	₩ 7,045,372,622	-	533,018,355	186,923,566	-	-	7,765,314,543
SERI	23,586,914	-	91,372	2,468,271	-	-	26,146,557
IKT	12,702,754	-	2,654,642	1,132,465	-	-	11,180,577
SEST	18,951,070	-	791,678	1,094,238	(1,303,108)	-	19,533,878
SDFLEX	14,191,946	-	2,114,808	-	-	(3,000,000)	13,306,754
ECOPROEM	23,777,031	24,000,000	3,319,652	-	-	-	44,457,379
Philenergy Secondary Battery Growth Fund	4,814,612	-	-	-	-	-	4,814,612
	-	670,000	-	-	-	-	670,000
Total	₩ 7,143,396,949	24,670,000	530,041,919	191,618,540	(1,303,108)	(3,000,000)	7,885,424,300

2) 2020

(In thousands of won)

Company	January 1, 2020	Acquisition	Share of profits (loss)	Other capital movements	Removal of dividends	December 31, 2020
SDC	₩ 6,701,186,392	-	283,404,730	60,781,500	-	7,045,372,622
SERI	23,636,155	-	23,355	(72,596)	-	23,586,914
IKT	13,141,203	-	383,885	(822,334)	-	12,702,754
SEST	4,889,153	-	4,831,284	1,088,176	-	10,808,613
SSEB	8,357,248	-	750,382	(965,173)	-	8,142,457
SDFLEX	11,966,978	-	3,724,968	-	(1,500,000)	14,191,946
ECOPROEM	-	24,000,000	(222,969)	-	-	23,777,031
Philenergy	-	5,000,040	(185,428)	-	-	4,814,612
Total	₩ 6,763,177,129	29,000,040	292,710,207	60,009,573	(1,500,000)	7,143,396,949

(5) None of the equity-accounted investees is a listed company as of December 31, 2021.

(6) No significant restriction exists on the Group's ability to transfer money from equity-accounted investees and redemption of borrowings or advances to equity-accounted investees. No contingent liabilities associated with equity-accounted investees have been identified.

For the years ended December 31, 2021 and 2020

12. Property, Plant and Equipment

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

(1) 2021

(In thousands of won)

	Land	Buildings and structures	Machinery	Tools, furniture and fixtures	Right-of-use assets	Construction -in progress	Total
Beginning balance	₩339,680,202	1,931,581,665	2,553,596,430	193,566,215	44,679,008	1,064,995,651	6,128,099,171
Acquisition cost	339,680,202	3,695,400,271	5,724,090,598	704,861,657	70,310,663	1,064,995,651	11,599,339,042
Accumulated depreciation	-	(1,763,818,606)	(3,170,494,168)	(511,295,442)	(25,631,655)	-	(5,471,239,871)
Acquisitions and capital expenditure	46,070	239,653,357	785,884,940	62,445,888	16,595,868	1,449,104,088	2,553,730,211
Depreciation	-	(130,364,153)	(888,471,340)	(129,158,394)	(24,938,021)	-	(1,172,931,908)
Disposals	-	(4,727,092)	(29,750,468)	(7,845,969)	(2,936,853)	(21,608,121)	(66,868,503)
Impairment losses	-	-	(11,662,400)	(74,515)	-	-	(11,736,915)
Government grants received	-	(25,101,047)	(54,557,977)	(1,519,910)	-	-	(81,178,934)
Other	4,466,954	20,368,144	522,491,958	76,670,839	-	(659,580,302)	(35,582,407)
Exchange rate fluctuation	1,126,787	106,469,447	(98,899,173)	2,296,788	1,835,218	309,635,807	322,464,874
Ending balance	₩ 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	345,320,013	4,076,457,298	6,655,250,486	790,459,938	83,079,072	2,142,547,123	14,093,113,930
Accumulated depreciation	-	(1,938,576,977)	(3,876,618,516)	(594,078,996)	(47,843,852)	-	(6,457,118,341)

Other amounts includes reclassification of construction-in-progress to appropriate accounts such as investment property, property, plant and equipment, and expense accounts. Also, it includes the changes incurred due to liquidation of subsidiaries.

For the years ended December 31, 2021 and 2020

12. Property, Plant and Equipment, Continued

(2) 2020

(In thousands of won)

	Land	Buildings and structures	Machinery	Tools, furniture and fixtures	Right-of-use assets	Construction - in progress	Total
Beginning balance	₩ 331,607,897	1,560,666,290	1,963,643,846	195,043,486	36,684,952	1,339,196,703	5,426,843,174
Acquisition cost	331,607,897	3,201,437,307	4,556,832,769	650,071,442	56,058,547	1,339,196,703	10,135,204,665
Accumulated depreciation	-	(1,640,771,017)	(2,593,188,923)	(455,027,956)	(19,373,595)	-	(4,708,361,491)
Acquisitions and capital expenditure	3,872,412	320,895,509	672,452,300	56,591,073	34,068,927	792,685,681	1,880,565,902
Depreciation	-	(112,485,481)	(720,344,952)	(127,321,825)	(24,820,244)	-	(984,972,502)
Disposals	(2,094)	(3,050,453)	(29,258,362)	(2,849,645)	(1,466,660)	(7,718,011)	(44,345,225)
Impairment losses	-	(20,057,728)	(21,955,453)	(2,308,474)	-	-	(44,321,655)
Other	1,336,396	158,865,479	694,599,743	74,517,201	-	(972,634,490)	(43,315,671)
Exchange rate fluctuation	2,865,591	26,748,049	(5,540,692)	(105,601)	212,033	(86,534,232)	(62,354,852)
Ending balance	₩ 339,680,202	1,931,581,665	2,553,596,430	193,566,215	44,679,008	1,064,995,651	6,128,099,171
Acquisition cost	339,680,202	3,695,400,271	5,724,090,598	704,861,657	70,310,663	1,064,995,651	11,599,339,042
Accumulated depreciation	-	(1,763,818,606)	(3,170,494,168)	(511,295,442)	(25,631,655)	-	(5,471,239,871)

Other amounts include reclassification of construction-in-progress to appropriate accounts such as investment property, property, plant and equipment, and expense accounts.

For the years ended December 31, 2021 and 2020

13. Intangible Assets

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

(1) 2021

<i>(In thousands of won)</i>		Industrial property	Development costs	Others	Goodwill	Total
Beginning balance	₩	65,065,927	-	119,523,865	608,983,505	793,573,297
Acquisition cost		151,992,121	6,331,931	836,271,540	638,306,486	1,632,902,078
Accumulated amortization		(86,926,194)	(6,331,931)	(716,747,675)	(29,322,981)	(839,328,781)
Acquisitions		1,161,660	-	1,130,255	-	2,291,915
Amortization		(11,119,681)	-	(67,926,087)	-	(79,045,768)
Disposals		(2,139,355)	-	(116,362)	-	(2,255,717)
Impairment losses		-	-	(31,161)	-	(31,161)
Other		10,805,622	-	75,367,504	-	86,173,126
Exchange rate fluctuation		(303,109)	-	(1,824,243)	332,728	(1,794,624)
Ending balance	₩	<u>63,471,064</u>	<u>-</u>	<u>126,123,771</u>	<u>609,316,233</u>	<u>798,911,068</u>
Acquisition cost		161,516,938	6,331,931	910,797,533	638,639,214	1,717,285,616
Accumulated amortization		(98,045,874)	(6,331,931)	(784,673,762)	(29,322,981)	(918,374,548)

Other amounts includes reclassification of long-term prepaid expenses to industrial property rights and of construction-in-progress to other intangible assets.

For the years ended December 31, 2021 and 2020

13. Intangible Assets, Continued

(2) 2020

<i>(In thousands of won)</i>		Industrial property	Development costs	Others	Goodwill	Total
Beginning balance	₩	63,639,538	448,332	161,611,158	605,671,634	831,370,662
Acquisition cost		139,504,276	6,331,932	791,090,316	634,994,615	1,571,921,139
Accumulated amortization		(75,864,738)	(5,883,600)	(629,479,158)	(29,322,981)	(740,550,477)
Acquisitions		2,664,836	-	1,635,259	-	4,300,095
Amortization		(11,061,456)	-	(87,268,516)	-	(98,329,972)
Disposals		(1,265,587)	-	(399,434)	-	(1,665,021)
Impairment losses		-	(446,850)	(135,577)	-	(582,427)
Other		11,388,793	-	46,284,625	-	57,673,418
Exchange rate fluctuation		(300,197)	(1,482)	(2,203,650)	3,311,871	806,542
Ending balance	₩	<u>65,065,927</u>	<u>-</u>	<u>119,523,865</u>	<u>608,983,505</u>	<u>793,573,297</u>
Acquisition cost		151,992,121	6,331,931	836,271,540	638,306,486	1,632,902,078
Accumulated amortization		(86,926,194)	(6,331,931)	(716,747,675)	(29,322,981)	(839,328,781)

Other amounts include reclassification of long-term prepaid expenses to exclusive industrial property rights and of construction-in-progress to other intangible assets.

(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, 2021 and 2020 are ₩877,648 million and ₩808,300 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 12.5% and 9.9% 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 as the estimated recoverable amount exceeded its carrying amount.

As of December 31, 2021, the Group has allocated ₩500,381 million of its goodwill to its electronic material business, and ₩08,935 million to Novaled.

For the years ended December 31, 2021 and 2020

14. Investment Property

Changes in investment property for the years ended December 31, 2021 and 2020 are summarized as follows:

(In thousands of won)

	2021			2020		
	Land	Buildings	Total	Land	Buildings	Total
Beginning balance	₩ 144,786,443	5,715,697	150,502,140	147,447,839	6,208,907	153,656,746
Reclassification	-	94,114	94,114	(2,661,396)	(307,561)	(2,968,957)
Depreciation	-	(186,077)	(186,077)	-	(185,649)	(185,649)
Ending balance	₩ 144,786,443	5,623,734	150,410,177	144,786,443	5,715,697	150,502,140

As of December 31, 2021 and 2020 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, 2021 and 2020 are ₩4,205 million and ₩4,474 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 ₩444,740 million was classified as Level 3 fair value based on the inputs used in the valuation technique.

For the years ended December 31, 2021 and 2020

15. Trade Payables and Other Liabilities

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

		2021		2020	
		Current	Non-current	Current	Non-current
<i>(In thousands of won)</i>					
Trade payables	₩	1,271,912,862	-	868,935,376	-
Accounts payable		1,313,277,660	33,139	522,836,705	53,114
Accrued expenses		484,886,099	-	310,477,482	-
Lease liabilities		16,879,385	21,681,686	23,854,489	23,617,353
Other		182,490,519	244,232,659	82,987,820	186,370,439
Total	₩	<u>3,269,446,525</u>	<u>265,947,484</u>	<u>1,809,091,872</u>	<u>210,040,906</u>

(*) Other liabilities include withholdings, guarantee deposits received, etc.

16. Borrowings

(1) Borrowings of the Group as of December 31, 2021 and 2020 are summarized as follows:

		2021	2020
<i>(In thousands of won)</i>			
Short-term borrowings			
Current portion of debentures in Korean won	₩	-	369,737,492
Current portion of long-term borrowings in foreign currency		275,373,299	680,283,720
Borrowings for import trade		5,665,892	35,271,676
Disposals of trade receivable		1,393,463,188	831,105,393
Short-term borrowings in foreign currency		835,714,424	511,105,899
Sub-total		<u>2,510,216,803</u>	<u>2,427,504,180</u>
Long-term borrowings			
Debentures		219,762,470	219,626,913
Long-term borrowings in foreign currency		1,887,998,333	1,264,692,692
Sub-total		<u>2,107,760,803</u>	<u>1,484,319,605</u>
Total	₩	<u>4,617,977,606</u>	<u>3,911,823,785</u>

For the years ended December 31, 2021 and 2020

16. Borrowings, Continued

(2) Debentures issued by the Parent company as of December 31, 2021 and 2020 are as follows:

(In thousands of won)

Type	Classification	Date of maturity	Annual interest rate (%)		2021	2020
Corporate Bonds	Unsecured	2021.09.10	2.20	₩	-	370,000,000
		2023.09.11	2.41		220,000,000	220,000,000
Sub-total					220,000,000	590,000,000
Less discount on debentures					(237,530)	(635,595)
Less current portion of long-term borrowings					-	(369,737,492)
Total					₩ 219,762,470	219,626,913

(3) Short-term borrowings in foreign currency as of December 31, 2021 and 2020 are summarized as follows:

(In thousands of won)

Borrower	Description	Financial institution	Date of maturity	Annual interest rate (%)		2021	2020
SDIBS	Operation fund	Sumitomo Mitsui Banking	2022.04.28	LIBOR 3M+0.80	₩	16,913,483	10,905,713
SDIA	Operation fund	Standard Chartered Bank	2022.06.23	LIBOR 3M+0.83		59,275,000	10,880,000
	Operation fund	Woori Bank	2022.09.16	LIBOR 3M+0.65		59,275,000	54,400,000
SDIHU	Operation fund	Citi Bank	2022.04.27	EURIBOR 3M+0.35		134,018,901	91,084,189
	Operation fund	BNP Paribas	2022.05.04	EURIBOR 3M+0.32		134,234,000	-
	Operation fund	Unicredit Bank Hungary Zrt	2022.05.19	EURIBOR 3M+0.20		200,008,660	147,206,400
TSDI	Operation fund	Bank of Communication	2022.06.28	LPR-0.45		75,321,934	114,753,588
	Operation fund	HSBC	2022.06.29	LPR-0.45		45,065,475	14,626,625
	Operation fund	Citi Bank	2022.04.26	LPR-1.35		35,045,241	-
SDITB	Operation fund	Bank of Communication	2021.03.27	LPR-0.45		-	1,820,745
	Operation fund	MIZUHO BANK CHINA, LTD.	2022.01.28	LPR-0.47		15,511,191	14,346,329
	Operation fund	Woori Bank China Limited	2022.09.28	2.98		36,499,644	36,874,249
Novaled	Operation fund	Shinhan Bank GmbH	2022.01.19	LIBOR 3M+0.95		7,113,000	6,528,000
	Operation fund	Ostsächsische Sparkasse Dresden	2022.11.29	LIBOR 3M+1.0		17,432,895	7,680,061
					₩	835,714,424	511,105,899

For the years ended December 31, 2021 and 2020

16. Borrowings, Continued

(4) Long-term borrowings in foreign currency as of December 31, 2021 and 2020 are summarized as follows:

(In thousands of won)

<u>Borrower</u>	<u>Description</u>	<u>Financial institution</u>	<u>Date of maturity</u>	<u>Annual interest rate (%)</u>	<u>2021</u>	<u>2020</u>
SDIBS	Facility loan	Sumitomo Mitsui Banking	2022.04.30	EURIBOR 3M+0.75 ₩	13,616,999	38,808,960
SAPB	Facility loan	HSBC	2021.10.14	LIBOR 3M+0.75	-	43,911,245
	Facility loan	KBD	2023.08.25	LIBOR 3M+0.82	59,518,157	-
SDIHU	Facility loan	Unicredit Bank Hungary Zrt	2024.05.28	EURIBOR 6M+0.35	268,468,000	401,472,000
	Facility loan	Raiffaisen Bank Zrt	2023.12.20	EURIBOR 6M+0.79	268,468,000	267,648,000
	Facility loan	THE EXPORT-IMPORT BANK OF KOREA	2022.12.13	EURIBOR 3M+0.54	261,756,300	260,956,800
	Facility loan	THE EXPORT-IMPORT BANK OF KOREA	2025.11.17	EURIBOR 3M+0.68	228,197,800	227,556,692
	Facility loan	KB KOOKMIN BANK	2025.02.26	EURIBOR 3M+0.70	402,702,000	401,472,000
	Facility loan	KB KOOKMIN BANK	2026.09.16	0.63	201,351,000	-
	Facility loan	KEB HANA BANK	2025.11.14	EURIBOR 3M+0.65	67,117,000	66,912,000
	Facility loan	Shinhan Bank	2025.11.17	EURIBOR 3M+0.67	40,270,200	40,147,200
	Facility loan	KBD	2024.04.12	EURIBOR 3M+0.40	268,468,000	-
SDITB	Facility loan	Shinhan Bank	2021.03.12	LIBOR 3M + 1.10	-	109,051,515
	Facility loan	HSBC	2021.06.09	LIBOR 3M + 0.90	-	87,040,000
	Facility loan	KBD	2023.06.07	LIBOR 3M + 0.76	83,438,176	-
Sub-total					2,163,371,632	1,944,976,412
Less current portion of long-term borrowings					(275,373,299)	(680,283,720)
Total					₩ 1,887,998,333	1,264,692,692

For the years ended December 31, 2021 and 2020

17. Provisions

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

(In thousands of won)

		Current			Non-current			Total
		Quality assurance	Onerous contract	Others	Incentives	Quality assurance	Others	
Balance at Jan.1.2020	₩	354,511,631	-	46,300,570	39,467,743	11,648,401	48,022,499	499,950,844
Provisions made		109,578,830	18,240,469	33,258,769	2,160,201	2,452,101	8,805,913	174,496,283
Provisions used		(220,606,237)	(12,244,217)	(26,666,280)	(15,231,023)	(14,100,502)	(3,402,043)	(292,250,302)
Balance at Dec.31.2020	₩	<u>243,484,224</u>	<u>5,996,252</u>	<u>52,893,059</u>	<u>26,396,921</u>	-	<u>53,426,369</u>	<u>382,196,825</u>
Balance at Jan.1.2021	₩	243,484,224	5,996,252	52,893,059	26,396,921	-	53,426,369	382,196,825
Provisions made		53,811,285	5,996,252	5,875,432	18,290,009	-	6,739,145	90,712,123
Provisions used		(57,315,106)	(5,996,252)	(2,062,916)	(5,996,252)	-	(5,544,482)	(76,915,008)
Balance at Dec.31.2021	₩	<u>239,980,403</u>	<u>5,996,252</u>	<u>56,705,575</u>	<u>38,690,678</u>	-	<u>54,621,032</u>	<u>395,993,940</u>

The Group recognizes a warranty provision (quality assurance) for the estimated costs of future repairs and recalls as accrued expenses, based on the experience. The Group also recognizes estimated costs in case of its customers' product recall from its end-users.

The Group has long-term incentive plans for its executives based on three-year performance criteria and made a provision for the estimated incentive.

Other than provisions stated above, the Group recognized provision for litigations expenses. As stated in Note 19 to the consolidated financial statements, details of provisions for litigations are not disclosed as it may affect the result of pending litigations.

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, the number of free allocation allowances for the for the 3rd planning periods (2021-2025) are summarized as follows:

(tCO ₂ -eq)				
For 2021	For 2022	For 2023	For 2024	For 2025
592,852	592,852	592,852	587,300	587,300

For the years ended December 31, 2021 and 2020

18. Employee Benefits

(1) Employee benefit liabilities as of December 31, 2021 and 2020 are summarized as follows:

1) Present value of defined obligations

(In thousands of won)

	<u>2021</u>	<u>2020</u>
Defined Benefit Obligations:		
Beginning balance	₩ 663,731,903	624,597,443
Current service cost	68,309,989	67,000,743
Interest cost	19,322,185	17,871,034
Obligations transferred from related parties	3,675,119	3,771,866
Gross benefit payments	(23,384,587)	(32,523,809)
Actuarial gain arising from assumptions	(1,780,561)	(9,710,558)
Contribution to the defined contribution plan	(10,146,331)	(7,550,913)
Exchange rate fluctuations	(83,611)	276,097
Ending balance	₩ <u>719,644,106</u>	<u>663,731,903</u>
Plan Assets	(710,285,844)	(625,026,672)
Net defined benefit liability (asset)	9,358,262	38,705,231

2) Fair value of plan assets

(In thousands of won)

	<u>2021</u>	<u>2020</u>
Beginning balance	₩ 625,026,672	563,284,540
Contributions paid into plan	101,277,931	69,776,556
Obligations paid by the plan	(16,777,386)	(12,532,922)
Plan assets transferred to related parties	(10,146,331)	(7,550,913)
Contribution to the defined contribution plan	18,552,813	16,457,938
Interest income	(7,748,694)	(5,153,185)
Actuarial gain arising from assumptions	121,494	752,737
Exchange rate fluctuations	(20,655)	(8,079)
Ending balance	₩ <u><u>710,285,844</u></u>	<u><u>625,026,672</u></u>

3) Other liabilities for employee benefits as of December 31, 2021 and 2020 are summarized as follows:

(In thousands of won)

	<u>2021</u>	<u>2020</u>
Liabilities for paid absence	₩ 65,376,737	60,935,548
Long-term incentive provisions	44,686,930	32,393,173
Other long-term employee benefits	50,779,259	49,660,473
Total	₩ <u><u>160,842,926</u></u>	<u><u>142,989,194</u></u>

For the years ended December 31, 2021 and 2020

18. Employee Benefits, Continued

(2) Expenses for employee benefits for the years ended December 31, 2021 and 2020 are summarized as follows:

<i>(In thousands of won)</i>	<u>2021</u>	<u>2020</u>
Current service costs	₩ 68,309,989	67,000,743
Interest cost	19,322,185	17,871,034
Interest income	(18,552,813)	(16,457,938)
Payment on defined contribution plans	7,750,434	13,313,552
Total	₩ <u>76,829,795</u>	<u>81,727,391</u>

(3) Fair value of plan assets as of December 31, 2021 and 2020 are summarized as follows:

<i>(In thousands of won)</i>	<u>2021</u>	<u>2020</u>
Severance insurance bonds (*)	₩ 710,017,381	624,751,370
National pension fund	268,463	275,302
Total	₩ <u>710,285,844</u>	<u>625,026,672</u>

(*) Plan assets include bank deposits, investment in government securities and corporate bond, etc.

(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, 2021 and 2020 are summarized as follows:

	<u>2021</u>	<u>2020</u>
Expected rate of salary increase	3.30 ~ 4.12%	3.25 ~ 4.41%
Discount rate for defined benefit obligations	3.59 ~ 3.96%	3.14 ~ 3.52%

Assumptions regarding future mortality have been based on published statistics and mortality tables from Korea Insurance Development Institute.

(5) Sensitivity analysis

Reasonably possible changes at the reporting date to one of the relevant actuarial assumptions as of December 31, 2021, holding other assumptions constant, would have affected the defined benefit obligation by the amounts shown below.

<i>(In thousands of won)</i>	<u>Present value of defined benefit obligations</u>	
	<u>If increased by 1%</u>	<u>If decreased by 1%</u>
Expected rate of salary increase	₩ 53,644,774	(48,205,719)
Discount rate for defined benefit obligations	(46,795,069)	52,958,932

For the years ended December 31, 2021 and 2020

19. Commitment and Contingencies

(1) As of December 31, 2021, the Group has been provided a guarantee of ₩79,321 million by Seoul Guarantee Insurance Co., Ltd. in relation to a court deposit and licensing procedures.

(2) The Group is defending several claims in North America and Europe related to price fixing of CRT and lithium-ion batteries. The Group has estimated its potential loss, 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 102 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 amount of compensations is uncertain.

(4) The Group has following borrowing commitments as of December 31, 2021.

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

	<u>Currency</u>	<u>Individual limit</u>	<u>Comprehensive limit</u>	<u>Name of financial institution</u>
Bank overdrafts	KRW	55	-	Woori Bank, KEB HANA BANK
General purpose loans	KRW	1,000	357	KEB HANA BANK, MUFG
	USD	645,729	-	Shinhan Bank and nine other banks
	CNY	3,100,000	-	Bank of China and three other banks
	EUR	350,000	-	Citi Bank and two other bank
Trade financing(Local L/C)	KRW	50	-	Shinhan Bank
A/S, Usance	USD	35,000	260,000	Shinhan Bank and four other bank
Guarantee payments for foreign currency	USD	220,960	230,000	Woori Bank and four other banks
D/A, D/P, O/A	USD	1,349,200	360,000	Woori Bank and nine other banks
Loans for Import trade	USD	-	260,000	DBS and two other bank
Total	KRW	1,105	357	
	USD	2,250,889	1,110,000	
	CNY	3,100,000	-	
	EUR	350,000	-	

(5) In accordance with technical license agreements, the Group recorded royalty expenses of ₩16,012 million and ₩15,818 million for the years ended December 31, 2021 and 2020, respectively.

For the years ended December 31, 2021 and 2020

19. Commitment and Contingencies, Continued

(6) As of December 31, 2021, 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 applies cash flow hedges and fair value hedge accounting in accordance with the entity's GAAP, and derivatives that are not effective in hedging gains and losses are 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 by the counterparty.

Details of the Group's foreign exchange forwards are as follows:

(In CNY, USD)

Subsidiaries	Selling currency	Selling amount	Buying currency	Buying amount	Forward rate (CNY/USD)	Expiry
SAPB	CNY	269,060,000	USD	40,000,000	6.7265	2022-04-08
	CNY	67,858,000	USD	10,000,000	6.7858	2023-08-25
	CNY	271,820,000	USD	40,000,000	6.7955	2023-08-25
	CNY	267,480,000	USD	40,000,000	6.6870	2023-11-24
	CNY	195,750,000	USD	30,000,000	6.5250	2022-12-13
SDITB	CNY	239,627,500	USD	35,000,000	6.8465	2023-03-07
	CNY	468,937,000	USD	70,000,000	6.6991	2023-06-08
	CNY	542,184,000	USD	80,000,000	6.7773	2023-06-27
	CNY	149,270,000	USD	22,000,000	6.7850	2023-06-27
	CNY	121,345,200	USD	18,000,000	6.7414	2023-06-27

As of December 31, 2021, the net carrying amount of the currency forward liabilities is ₩12,404 million, and the Group recognized effective portion of profit on valuation of derivatives in profit and loss amounting ₩18,409 million. The Group also recognized loss from settlement of currency forward in profit and loss amounting ₩ 25,208 million.

(7) The Group entered into 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)

Descriptions	Expiry	Remaining quantity (tons)	Contract price
Nickel (Ni)	2023-01-31	1,781	13,000
Nickel (Ni)	2023-01-31	1,825	13,500
Nickel (Ni)	2023-01-31	708	13,200
Nickel (Ni)	2023-02-28	3,122	12,700
Copper (Cu)	2024-12-31	6,290	5,296

As of December 31, 2021, the net carrying amount of the commercial swap asset is ₩98,128 million, and the Group recognized the effective portion of gain on valuation of derivatives amounting to ₩74,381 million as other comprehensive income, net of tax.

For the years ended December 31, 2021 and 2020

19. Commitment and Contingencies, Continued

(8) Until December 31, 2021, the Group has acquired 40% ownership of ECOPRO EM Co., Ltd. by investing ₩48,000 million. Also, if the agreement is terminated due to breach of contract by each party, the Group and ECOPRO BM CO., LTD. own put option and call option on all of the shares of ECOPRO EM Co., Ltd. owned by the Group, respectively.

(9) 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 breach of contract by each party, the Group and PHILOPTICS CO., LTD. own put option and call option on all of the shares of Philenergy Co., Ltd. owned by the Group, respectively.

For the years ended December 31, 2021 and 2020

20. Capital Stock and Capital Surplus

(1) Capital stock

Ordinary shares and preferred shares issued and outstanding as of December 31, 2021 and 2020 are summarized as follows:

1) 2021

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

2) 2020

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

(2) Capital surplus as of December 31, 2021 and 2020 are summarized as follows:

<i>(In thousands of won)</i>		<u>2021</u>	<u>2020</u>
Additional paid-in-capital	₩	4,838,555,882	4,838,555,882
Other capital surpluses		<u>163,418,811</u>	<u>163,418,811</u>
Total	₩	<u><u>5,001,974,693</u></u>	<u><u>5,001,974,693</u></u>

(3) Dividends by the Parent Company for the reporting periods ending December 31, 2021 and 2020 are summarized as follows. Dividends for the year ended December 31, 2021 will be presented to the general shareholders' meeting of the Parent Company.

<i>(In thousands of won)</i>		<u>2021</u>	<u>2020</u>
Ordinary shares (2021: ₩1,000 per share, 2020: ₩1,000 per share)	₩	65,433,139	65,433,139
Preferred shares (2021: ₩1,050 per share, 2020: ₩1,050 per share)		<u>1,511,471</u>	<u>1,511,471</u>
	₩	<u><u>66,944,610</u></u>	<u><u>66,944,610</u></u>

21. Other capital

Other capital comprises treasury shares of the Parent Company, which were acquired to raise value of its shareholders. Number of treasury shares and its carrying amount as of December 31, 2021 and 2020 are as follows:

<i>(In thousands of won)</i>	<u>2021</u>			<u>2020</u>		
	<u>Ordinary shares</u>	<u>Preferred shares</u>	<u>Total</u>	<u>Ordinary shares</u>	<u>Preferred shares</u>	<u>Total</u>
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

For the years ended December 31, 2021 and 2020

22. Accumulated other comprehensive income

Accumulated other comprehensive income, net of tax, as of December 31, 2021 and 2020 are summarized as follows:

<i>(In thousands of won)</i>		<u>2021</u>	<u>2020</u>
Equity instruments at FVOCI – net change in fair value	₩	458,759,112	221,855,262
Cash flow hedges – effective portion of changes in fair value		74,380,921	61,173,881
Unrealized gain on equity method investments		862,842,612	673,717,601
Unrealized loss on equity method investments		(346,193,957)	(302,343,314)
Gain (loss) on translation of foreign operations		124,446,870	(108,444,410)
Total	₩	<u>1,174,235,558</u>	<u>545,959,020</u>

23. Retained earnings

(1) Retained earnings as of December 31, 2021 and 2020 are summarized as follows:

<i>(In thousands of won)</i>		<u>2021</u>	<u>2020</u>
Legal reserve	₩	172,839,121	166,144,661
Discretionary reserve		5,679,798,000	5,532,528,000
Unappropriated retained earnings		2,663,836,213	1,719,429,099
Total	₩	<u>8,516,473,334</u>	<u>7,418,101,760</u>

(2) Statement of retained earnings of the Parent Company for the years ended December 31, 2021 and 2020 are summarized as follows:

<i>(In thousands of won)</i>		<u>2021</u>	<u>2020</u>
(i) Unappropriated retained earnings	₩	592,092,760	220,915,644
- Retained Earnings from Previous Year		6,573	7,174
- Defined benefit plan actuarial gain		(4,463,656)	3,592,427
- Profit for the Year		596,549,843	217,316,043
(ii) Transfer of discretionary reserve		-	-
(iii) Changed retained earnings		(592,079,071)	(220,909,071)
- Legal reserve		(6,694,461)	(6,694,461)
- Dividends		(66,944,610)	(66,944,610)
- Reserve of facility		(518,440,000)	(147,270,000)
Total	₩	<u>13,689</u>	<u>6,573</u>

For the years ended December 31, 2021 and 2020

24. Selling, General, and Administrative Expenses

Details of selling, general and administrative expenses for the years ended December 31, 2021 and 2020 are summarized as follows:

<i>(In thousands of won)</i>	2021	2020
Salaries and wages	₩ 336,121,452	221,944,528
Severance and retirement benefits	20,756,256	15,188,127
Employee fringe benefits	89,409,193	77,941,408
Depreciation	52,381,508	49,368,902
Amortization	38,919,461	56,825,105
Research and development expenses	877,647,905	808,300,073
Selling and distribution cost	187,279,404	127,108,144
Fees and commissions	124,838,105	107,087,930
(Reversal of) Bad debt expenses	155,706	(1,589,166)
Others	282,533,589	247,042,604
Total	₩ <u>2,010,042,579</u>	<u>1,709,217,655</u>

25. The Nature of Expenses

The nature of expenses for the years ended December 31, 2021 and 2020 is summarized as follows:

<i>(In thousands of won)</i>	2021	2020
Changes in inventories	₩ (4,419,832,915)	(3,372,279,185)
Raw material used	11,554,867,014	9,502,222,903
Salaries and wages	1,463,694,488	1,184,893,883
Severance and retirement benefits	102,604,443	84,212,514
Employee benefits	421,096,402	366,873,144
Depreciation	1,173,117,985	985,158,151
Amortization	79,045,768	98,329,972
Others	2,111,051,463	1,774,023,706
Total	₩ <u>12,485,644,648</u>	<u>10,623,435,088</u>

For the years ended December 31, 2021 and 2020

26. Other Income and Other Expenses

(1) Other income for the years ended December 31, 2021 and 2020 is summarized as follows:

<i>(In thousands of won)</i>	2021	2020
Dividends income	₩ 12,385,096	12,080,122
Commission income	-	4,680
Rental income	301,253	297,619
Reversal of other bad debt expenses	-	24,003
Gain on sale of property, plant and equipment	2,891,387	2,333,341
Gain on sale of intangible assets	-	6,074,737
Gain on sale of non-current assets held-for-sale	-	55,497
Gain on lease termination	3,447	13,077
Miscellaneous income	36,379,705	29,321,927
Total	₩ <u>51,960,888</u>	<u>50,205,003</u>

(2) Other expenses for the years ended December 31, 2021 and 2020 are summarized as follows:

<i>(In thousands of won)</i>	2021	2020
Donations	₩ 6,162,258	5,870,056
Loss on sale of property, plant and equipment	44,880,498	35,235,066
Loss on impairment of property, plant and equipment	11,736,915	44,321,655
Loss on sale of intangible assets	2,266,605	432,386
Loss on impairment of intangible assets	31,161	582,427
Loss on disposal of equity method investments	1,303,108	-
Loss on lease termination	91,359	55,890
Legal expenses and other miscellaneous expenses	26,856,571	61,242,888
Total	₩ <u>93,328,475</u>	<u>147,740,368</u>

For the years ended December 31, 2021 and 2020

27. Financial Income and Financial Cost

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

<i>(In thousands of won)</i>	2021	2020
Financial income		
Interest income	₩ 12,208,588	12,009,583
- Bank deposit	8,476,986	7,686,638
- Other	3,731,603	4,322,945
Gain on foreign currency transaction	326,200,523	405,510,807
Gain on foreign currency translation	29,610,575	72,804,936
Gain on valuation of derivatives	18,409,364	-
Gain on transaction of derivatives	-	10,036,037
Gain on valuation of financial assets at fair value through profit or loss	103,841,930	28,464,761
Gain on disposal of financial assets at fair value through profit or loss	57,349,010	-
Sub-total	<u>547,619,990</u>	<u>528,826,124</u>
Financial expense	-	
Interest expense	57,204,723	68,958,897
- Borrowing	39,256,614	39,790,547
- Debentures	11,350,936	15,553,261
- Other	6,597,173	13,615,089
Loss on foreign currency transactions	298,017,240	426,398,166
Loss on foreign currency translation	42,110,743	40,722,160
Loss on valuation of derivatives	-	41,550,527
Loss on transaction of derivatives	36,720,206	3,088,129
Loss on Disposal of Trade account receivables	1,991,933	28,941
Loss on valuation of financial assets at fair value through profit or loss	4,489,752	11,178,871
Loss on disposal of financial assets at fair value through profit or loss	3	-
Sub-total	<u>440,534,600</u>	<u>591,925,691</u>
Net financial expense (income)	₩ <u>(107,085,390)</u>	<u>63,099,567</u>

28. Income Tax Expense

(1) Income tax expense for the years ended December 31, 2021 and 2020 is summarized as follows:

<i>(In thousands of won)</i>	2021	2020
Current income taxes	₩ 285,633,103	109,729,433
Deferred income taxes from changes in temporary differences	116,385,547	114,545,279
Deferred income taxes from changes in tax credit carry forward	11,153,497	(51,541,136)
Others	(238,385)	(289,240)
Income tax expense	₩ <u>412,933,762</u>	<u>172,444,336</u>

For the years ended December 31, 2021 and 2020

28. Income Tax Expense, Continued

(2) Deferred tax assets and liabilities recognized at stockholders' equity as of December 31, 2021 and 2020 is summarized as follows:

1) 2021

<i>(In thousands of won)</i>	<u>Before tax</u>	<u>Deferred tax assets (liabilities)</u>	<u>After tax</u>
Capital surplus of equity-accounted investees ₩	44,411,694	5,421,821	49,833,515
Actuarial gain (losses) from defined benefit plan	(126,493,348)	30,611,390	(95,881,958)
Change in equity of equity-accounted investees	808,941,776	(167,846,250)	641,095,526
Cash flow hedges – effective portion of changes in fair value	98,127,864	(23,746,943)	74,380,921
Equity instruments at FVOCI – net change in fair value	605,223,103	(146,463,991)	458,759,112
Total ₩	<u>1,430,211,089</u>	<u>(302,023,973)</u>	<u>1,128,187,116</u>

2) 2020

<i>(In thousands of won)</i>	<u>Before tax</u>	<u>Deferred tax assets (liabilities)</u>	<u>After tax</u>
Capital surplus of equity-accounted investees ₩	37,773,265	5,421,821	43,195,086
Actuarial gain (losses) from defined benefit plan	(120,576,184)	29,179,437	(91,396,747)
Change in equity of equity-accounted investees	562,403,111	(129,505,351)	432,897,760
Cash flow hedges – effective portion of changes in fair value	80,704,329	(19,530,448)	61,173,881
Equity instruments at FVOCI – net change in fair value	292,685,042	(70,829,780)	221,855,262
Total ₩	<u>852,989,563</u>	<u>(185,264,321)</u>	<u>667,725,242</u>

(3) Reconciliation of effective tax rate for the years ended December 31, 2021 and 2020 are summarized as follows:

<i>(In thousands of won)</i>	<u>2021</u>	<u>2020</u>
Profit before income tax ₩	1,663,335,322	803,410,634
Income tax using the Group's statutory tax rate	322,265,509	194,425,373
Adjustments		
Foreign withholding tax	17,634,085	10,564,011
Permanent differences	(19,205,847)	6,315,343
Tax loss carry forwards	16,739,215	(1,589)
Unrecognized temporary differences	(5,196,528)	(72,821,315)
Tax credits	(108,011,281)	(49,196,900)
Difference in tax rate	1,093	1,093
Consolidation adjustments, and others	188,707,516	83,158,320
Income tax expense ₩	<u>412,933,762</u>	<u>172,444,336</u>
Average effective tax rate	24.8%	21.5%

For the years ended December 31, 2021 and 2020

28. Income Tax Expense, Continued

(4) As of December 31, 2021, 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) Changes in deferred tax assets (liabilities) for the years ended December 31, 2021 and 2020 are summarized as follows:

(In thousands of won)

	2021			2020		
	Beginning balance	Changes	Ending balance	Beginning balance	Changes	Ending balance
Tangible/Intangible assets	₩ 85,928,054	12,719,927	98,647,981	87,225,182	(1,297,128)	85,928,054
Investment in subsidiaries and associates	(1,458,953,066)	(165,999,923)	(1,624,952,989)	(1,352,726,151)	(106,226,915)	(1,458,953,066)
Inventories	5,983,803	(2,032,050)	3,951,753	8,236,022	(2,252,219)	5,983,803
Accrued expenses	122,126,061	(9,833,987)	112,292,074	152,006,288	(29,880,227)	122,126,061
Available-for-sale financial assets	(126,108,925)	26,986,960	(99,121,965)	(119,347,268)	(6,761,657)	(126,108,925)
Others	28,474,216	(25,200,311)	3,273,905	16,759,729	11,714,487	28,474,216
Sub total	(1,342,549,857)	(163,359,384)	(1,505,909,241)	(1,207,846,198)	(134,703,659)	(1,342,549,857)
Deferred tax added to capital	(185,264,321)	(116,759,652)	(302,023,973)	(132,444,588)	(52,819,733)	(185,264,321)
Tax credit	169,652,006	(11,379,051)	158,272,955	116,694,752	52,957,254	169,652,006
Temporary differences of subsidiaries	77,569,595	59,571,802	137,141,397	68,797,768	8,771,827	77,569,595
Total	₩		<u>(1,512,518,862)</u>			<u>(1,280,592,577)</u>

(6) At 31 December 2021, there was a deferred tax liability of ₩3,930 million for temporary differences of ₩16,239 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 they 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.

For the years ended December 31, 2021 and 2020

29. Earning per Share

(1) Basic earnings per share

1) Basic earnings per share for the years ended December 31, 2021 and 2020 are calculated as follows:

(i) Ordinary Shares

(In thousands of won, except earnings per share)

	<u>2021</u>	<u>2020</u>
Profit attributable to the owners of the Company	₩ 1,169,801,395	574,723,494
Profit attributable to ordinary shares	1,144,549,900	562,281,608
Weighted average number of ordinary shares (basic)	65,433,139	65,433,139
Basic earnings per share (won)	17,492	8,593

(ii) Preferred Shares

(In thousands of won, except earnings per share)

	<u>2021</u>	<u>2020</u>
Profit attributable to the owners of the Company	₩ 1,169,801,395	574,723,494
Profit attributable to preferred shares	25,251,495	12,441,886
Weighted average number of preferred shares (basic)	1,439,496	1,439,496
Basic earnings per share (won)	17,542	8,643

2) Weighted average number of shares for the years ended December 31, 2021 and 2020 is calculated as follows:

(i) Ordinary Shares

(In shares)

	<u>2021</u>	<u>2020</u>
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)	<u>65,433,139</u>	<u>65,433,139</u>

(ii) Preferred Shares

(In shares)

	<u>2021</u>	<u>2020</u>
Issued preferred shares at January 1	1,617,896	1,617,896
Treasury stock	(178,400)	(178,400)
Weighted-average number of preferred shares outstanding (basic)	<u>1,439,496</u>	<u>1,439,496</u>

The preferred shares are not entitled to priority rights other than an additional 1% of dividend per annum compared to ordinary shares. The Group calculated basic earnings per share considering this feature of the preferred shares.

(2) Diluted earnings per share

Diluted earnings per share are the same as basic earnings per share since there are no diluted effects for the years ended December 31, 2021 and 2020.

For the years ended December 31, 2021 and 2020

30. Leases

(1) Right-of-use assets

The details of the right-of-use assets, plant and equipment as a result of the introduction of K-IFRS 1116 'Lease' are as follows:

1) 2021

<i>(In thousands of won)</i>		<u>Land</u>	<u>Buildings and structures</u>	<u>Tools, furniture and fixtures</u>	<u>Total</u>
Beginning balance	₩	6,620,010	32,239,452	5,819,546	44,679,008
Acquisition cost		9,930,749	51,262,772	9,117,142	70,310,663
Accumulated depreciation		(3,310,739)	(19,023,320)	(3,297,596)	(25,631,655)
Acquisitions and capital expenditure		278,459	14,444,831	1,872,578	16,595,868
Depreciation		(4,737,625)	(17,244,210)	(2,956,186)	(24,938,021)
Disposals		(479,438)	(1,710,317)	(747,098)	(2,936,853)
Exchange rate fluctuation		141,826	1,279,260	414,132	1,835,218
Ending balance	₩	<u>1,823,232</u>	<u>29,009,016</u>	<u>4,402,972</u>	<u>35,235,220</u>
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)

2) 2020

<i>(In thousands of won)</i>		<u>Land</u>	<u>Buildings and structures</u>	<u>Tools, furniture and fixtures</u>	<u>Total</u>
Beginning balance	₩	1,889,453	30,322,758	4,472,741	36,684,952
Acquisition cost		6,041,095	43,580,940	6,436,512	56,058,547
Accumulated depreciation		(4,151,642)	(13,258,182)	(1,963,771)	(19,373,595)
Acquisitions and capital expenditure		9,393,129	20,269,131	4,406,667	34,068,927
Depreciation		(4,673,165)	(16,797,276)	(3,349,803)	(24,820,244)
Disposals		(4,877)	(1,355,348)	(106,435)	(1,466,660)
Exchange rate fluctuation		15,470	(199,813)	396,376	212,033
Ending balance	₩	<u>6,620,010</u>	<u>32,239,452</u>	<u>5,819,546</u>	<u>44,679,008</u>
Acquisition cost		9,930,749	51,262,772	9,117,142	70,310,663
Accumulated depreciation		(3,310,739)	(19,023,320)	(3,297,596)	(25,631,655)

(2) Amounts recognized in profit or loss

<i>(In thousands of won)</i>		<u>2021</u>	<u>2020</u>
Interest on lease liabilities	₩	815,634	1,046,728
Expenses relating to short-term leases		6,027,041	5,733,633
Expenses relating to leases of low-value assets, excluding short-term leases of low-value assets.		2,058,199	1,673,537
Total	₩	<u>8,900,874</u>	<u>8,453,898</u>

For the years ended December 31, 2021 and 2020

30. Leases, continued

(3) Maturity of lease liabilities

<i>(In thousands of won)</i>	<u>2021</u>	<u>2020</u>
Less than one year	₩ 17,017,152	24,080,364
One to five year	17,857,548	21,578,690
More than five year	<u>5,443,988</u>	<u>3,680,500</u>
Total undiscounted lease receivable	40,318,688	49,339,554
Lease liabilities recognized in the statement of financial position as of 31 December	<u>38,561,071</u>	<u>47,471,842</u>
Current lease liabilities	16,879,385	23,854,489
Non-current lease liabilities	21,681,686	23,617,353

(4) Amounts recognized in statement of cash flow

<i>(In thousands of won)</i>	<u>2021</u>	<u>2020</u>
Total cash outflow for leases	₩ 32,492,460	28,483,841

(5) Extension option

Some lease contracts 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 substantially all 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 expressed in undiscounted amounts.

<i>(In thousands of won)</i>	<u>2021</u>	<u>2020</u>
Less than one year	₩ 4,200,683	4,200,683
One to five years	4,200,683	4,200,683

For the years ended December 31, 2021 and 2020

31. Related Parties

(1) Group's related parties as of December 31, 2021 are as follows:

Associates	Samsung Display Co., Ltd. ("SDC") and subsidiaries Samsung Economic Research Institute ("SERI") SD FLEX CO., LTD. ("SDFLEX") Intellectual Keystone Technology LLC ("IKT") Samsung SDI-Sungrow Energy Storage Battery Co., Ltd. ("SSEB") Sungrow-Samsung SDI Energy Storage Power Supply Co., Ltd. ("SSEP") ECOPRO EM Co., Ltd. ("ECOPROEM") Philenergy Co., Ltd. ("Philenergy") Secondary Battery Growth Fund
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, 2021 and 2020 are summarized as follows:

1) 2021

<i>(In thousands of won)</i>		Revenues	Disposal of Property, Plant and Equipment	Other Income	Inventory purchase	Purchase of property plant and equipment	Other expenses
Associates							
SDC	₩	362,442,750	-	26,398,206	1,144,999	-	1,251,053
SERI		-	-	-	-	-	6,987,266
SD FLEX CO., LTD.		147,312	2,000	1,272,659	10,282,727	-	46,239
ECOPROEM		-	-	-	11,827,553	-	-
Philenergy CO., LTD.		-	-	25,889	-	117,110,983	295,055
SEST		60,859,066	-	-	-	-	2,831,912
Conglomerate entities							
SEC		1,410,612,101	-	1,684,573	2,084,454	15,474,334	47,051,617
Others		4,530,567	-	11,006,709	1,631,061	52,252,966	202,696,647
Total	₩	<u>1,838,591,796</u>	<u>2,000</u>	<u>40,388,036</u>	<u>26,970,794</u>	<u>184,838,283</u>	<u>261,159,789</u>

2) 2020

<i>(In thousands of won)</i>		Revenues	Other Income	Inventory purchase	Purchase of property plant and equipment	Other expenses
Associates						
SDC	₩	514,032,666	26,240,672	863,222	-	1,703,924
SERI		-	-	-	-	5,024,741
SD FLEX		142,872	1,428,254	6,952,043	-	35,430
Philenergy		-	-	-	45,303,604	12,070
SSEP		53,084,333	-	-	-	-
SSEB		161,034	-	-	-	1,763,391
Conglomerate entities						
SEC		1,401,097,337	7,520,608	2,431,624	5,093,252	53,564,670
Others		9,451,880	15,995,196	538,249	70,867,589	201,029,567
Total	₩	<u>1,977,970,122</u>	<u>51,184,730</u>	<u>10,785,138</u>	<u>121,264,445</u>	<u>263,133,793</u>

For the years ended December 31, 2021 and 2020

31. Related Parties, Continued

(3) Details of significant account balances with related parties as of December 31, 2021 and 2020 are summarized as follows:

1) 2021

<i>(In thousands of won)</i>	<u>Account receivable</u>	<u>Other receivable, etc</u>	<u>Account payable</u>	<u>Other payable, etc</u>
Associates				
SDC	₩ 50,132,283	-	-	299,928
SERI	-	-	-	917,942
SD FLEX CO., LTD.	-	147,677	853,162	4,628
ECOPROEM	-	-	11,854,458	-
Philenergy CO., LTD.	-	-	-	19,040,089
SEST	1,153,421	-	-	-
Conglomerate entities				
SEC	116,039,445	8,585,740	-	131,698,481
Others	1,171,752	26,532,797	471,494	73,495,909
Total	₩ 168,496,901	35,266,214	13,179,114	225,456,977

2) 2020

<i>(In thousands of won)</i>	<u>Account receivable</u>	<u>Other receivable, etc</u>	<u>Account payable</u>	<u>Other payable, etc</u>
Associates				
SDC	₩ 59,875,653	-	-	13,752
SERI	-	-	-	161,851
SDFLEX	13,504	133,490	911,529	4,357
Philenergy	-	-	-	338,569
SSEP	27,118,793	-	-	-
SSEB	8,070	-	-	-
Conglomerate entities				
SEC	119,497,267	8,505,065	-	109,999,392
Others	7,133,064	27,431,386	135,921	71,662,429
Total	₩ 213,646,351	36,069,941	1,047,450	182,180,350

(4) Personnel compensation to registered officers (the "key management") who have the authority and responsibility in planning, directing, and control of the Group are ₩6,038 million and ₩9,690 million, for the years ended December 31, 2021 and 2020, respectively.

As of December 31, 2021 and 2020, liabilities related to long-term employee benefits for key management are ₩7,669 million and ₩5,445 million, respectively. In addition, liabilities related to retirement benefits for key management as of December 31, 2021 and 2020 are ₩11,486 million and ₩6,047 million, respectively.

For the years ended December 31, 2021 and 2020

32. Non-controlling Interest

Non-controlling interests as of and for the years ended December 31, 2021 and 2020 are summarized as follows:

(1) 2021

<i>(In millions of won)</i>		NOVALED	America	China (TSDI and 4 others)	Others	Total
Current assets	₩	121,093	222,587	1,411,973	4,335	1,759,988
Non-current assets		465,766	57,900	2,421,210	176,168	3,121,044
Current liabilities		33,949	236,595	1,355,335	3,623	1,629,502
Non-current liabilities		117	8,621	669,133	-	677,871
Net assets		552,793	35,271	1,808,715	176,880	2,573,659
Carrying amount of non-controlling interest		211,538	3,144	275,863	1,890	492,435
Sales		167,236	429,164	2,815,869	-	3,412,269
Net income (loss)		74,937	(1,101)	167,655	122,706	364,197
Total comprehensive income		75,624	1,745	309,394	122,706	509,469
Net income (loss) distributed to non-controlling interest		37,396	(96)	42,073	1,227	80,600
Cash flow from operating activities		31,637	(3,506)	105,903	(20)	134,014
Cash flow from investing activities		(27,960)	(543)	(97,198)	563	(125,138)
Cash flow from financing activities before payment of dividends to non-controlling interest		3,569	3,699	(9,358)	(513)	(2,603)
Dividends attributed to non-controlling interest		-	-	(2,509)	(1)	(2,510)
Exchange rate changes		16	188	5,677	-	5,881
Changes in cash and cash equivalents		7,262	(162)	2,515	29	9,644

The condensed information on cash flows is translated to Korean Won based on the cash flow of subsidiaries before consolidation adjustments.

For the years ended December 31, 2021 and 2020

32. Non-controlling Interest, Continued

(2) 2020

<i>(In millions of won)</i>	<u>NOVALED</u>	<u>America</u>	<u>China (TSDI and 6 others)</u>	<u>Others</u>	<u>Total</u>
Current assets	₩ 277,922	128,709	1,328,523	1,115	1,736,269
Non-current assets	222,686	56,492	1,729,527	104,984	2,113,689
Current liabilities	20,401	141,439	1,359,601	533	1,521,974
Non-current liabilities	3,037	10,236	277,039	-	290,312
Net assets	477,170	33,526	1,421,410	105,566	2,037,672
Carrying amount of non-controlling interest	173,965	3,008	203,160	1,177	381,310
Sales	143,086	274,124	2,219,686	-	2,636,896
Net income (loss)	51,776	(5,354)	103,048	(3,169)	146,301
Total comprehensive income	64,382	(7,034)	81,355	(3,169)	135,534
Net income (loss) distributed to non-controlling interest	25,838	(446)	30,883	(32)	56,243
Cash flow from operating activities	34,757	(551)	130,818	(14)	165,010
Cash flow from investing activities	(29,551)	(1,078)	(49,023)	(197)	(79,849)
Cash flow from financing activities before payment of dividends to non-controlling interest	(248)	3,887	(48,097)	182	(44,276)
Dividends attributed to non-controlling interest	-	-	(2,451)	-	(2,451)
Exchange rate changes	559	(187)	(2,369)	-	(1,997)
Changes in cash and cash equivalents	5,517	2,071	28,878	(29)	36,437

The condensed information on cash flows is translated to Korean Won based on the cash flow of subsidiaries before consolidation adjustments.

For the years ended December 31, 2021 and 2020

33. Statement of Cash Flows

Adjustment and changes in assets and liabilities for cash flows from operating activities for the years ended December 31, 2021 and 2020 are summarized as follows:

(1) Adjustment for cash flows from operating activities

<i>(In thousands of won)</i>		2021	2020
Severance & retirement benefits	₩	69,079,361	68,420,158
Valuation of inventories (reversed)		17,409,658	(49,692,481)
Loss on sale of account receivables		1,991,933	28,941
Depreciation		1,173,117,985	985,158,151
Amortization		79,045,768	98,329,972
(Reversal of) bad debt expense		155,706	(1,618,068)
Share of profit of equity accounted investees		(530,041,919)	(292,710,207)
Loss on disposal of subsidiary		1,303,108	-
Loss (gain) on foreign currency translations, net		12,500,168	(31,981,928)
Effective portion of unrealized changes in fair values of cash flow hedges		(18,409,364)	41,550,527
Gain on sale of Derivative financial instruments, net		36,720,206	(6,947,908)
Loss on sale of property, plant and equipment, net		41,989,111	32,901,725
Impairment losses on property, plant and equipment		11,736,915	44,321,655
Loss (gain) on sale of intangible assets		2,266,605	(5,642,349)
Impairment losses on intangible assets		31,161	582,427
Gain on sale of non-current assets held-for-sale		-	(55,497)
Equity instruments at FVTPL – net change in fair value		(99,352,178)	(17,285,890)
Loss (gain) on sale of equity instruments at FVTPL		(57,349,007)	16,428
Income tax expense		412,933,762	172,444,336
Interest expense		57,204,723	68,958,897
Interest income		(12,208,588)	(12,009,583)
Dividend income		(12,385,096)	(12,080,122)
Loss on lease termination		87,912	42,813
Miscellaneous profit and loss		(130,286)	321,416
Total	₩	<u>1,187,697,644</u>	<u>1,083,053,413</u>

For the years ended December 31, 2021 and 2020

33. Statement of Cash Flows, Continued

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

<i>(In thousands of won)</i>	2021	2020
Changes in assets and liabilities:		
Trade receivables	₩ (283,711,615)	208,822,949
Other receivables	35,629,862	(38,561,560)
Other current assets	9,183,592	(71,606,931)
Inventories	564,363	293,270,664
Non-current other receivables	495,986	(12,109,495)
Non-current other assets	(45,954,693)	(36,932,894)
Trade payables	310,091,622	296,862,445
Other payables	64,351,275	(436,814,039)
Advance received	(146,651,288)	291,971,692
Unearned revenue	31,225,688	(237,714)
Other non-current payables	104,514,485	(16,283,277)
Payment of retirement and employee benefits	(29,988,213)	(37,168,472)
Plan assets	(74,355,506)	(49,697,386)
Total	₩ (24,604,442)	391,515,982

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

<i>(In thousands of won)</i>	2021	2020
Increase of payables related to acquisition of plant, property, and equipment	₩ 282,416,077	28,645,932
Decrease (increase) of receivables related to disposal of plant, property, and equipment	(11,250,224)	2,165,214

For the years ended December 31, 2021 and 2020

33. Statement of Cash Flows, Continued

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

1) 2021

(In thousands of won)

		January 1, 2021	Cash flow from financing activities	Non-cash changes			December 31, 2021
				Interest expense, etc.	Reclassify current portion	Changes in foreign exchange rates	
Current portion of debentures	₩	369,737,492	(370,000,000)	262,508	-	-	-
Short-term borrowings		2,057,766,687	136,766,289	-	275,373,299	40,310,527	2,510,216,802
Debtentures		219,626,914	-	135,558	-	-	219,762,472
Long-term borrowings		1,264,692,692	881,522,739	-	(275,373,299)	17,156,200	1,887,998,332
Lease liabilities		47,471,842	(24,407,220)	15,406,275	-	90,175	38,561,072
Total	₩	3,959,295,627	623,881,808	15,804,341	-	57,556,902	4,656,538,678

2) 2020

(In thousands of won)

		January 1, 2020	Cash flow from financing activities	Non-cash changes			December 31, 2020
				Interest expense, etc.	Reclassify current portion	Changes in foreign exchange rates	
Current portion of debentures	₩	99,940,992	(100,000,000)	59,008	369,737,492	-	369,737,492
Short-term borrowings		1,666,533,993	(309,354,445)	-	680,283,720	20,303,419	2,057,766,687
Debtentures		588,869,273	-	495,133	(369,737,492)	-	219,626,914
Long-term borrowings		1,213,125,617	740,043,845	-	(680,283,720)	(8,193,050)	1,264,692,692
Lease liabilities		36,651,228	(21,076,670)	31,891,997	-	5,287	47,471,842
Total	₩	3,605,121,103	309,612,730	32,446,138	-	12,115,656	3,959,295,627