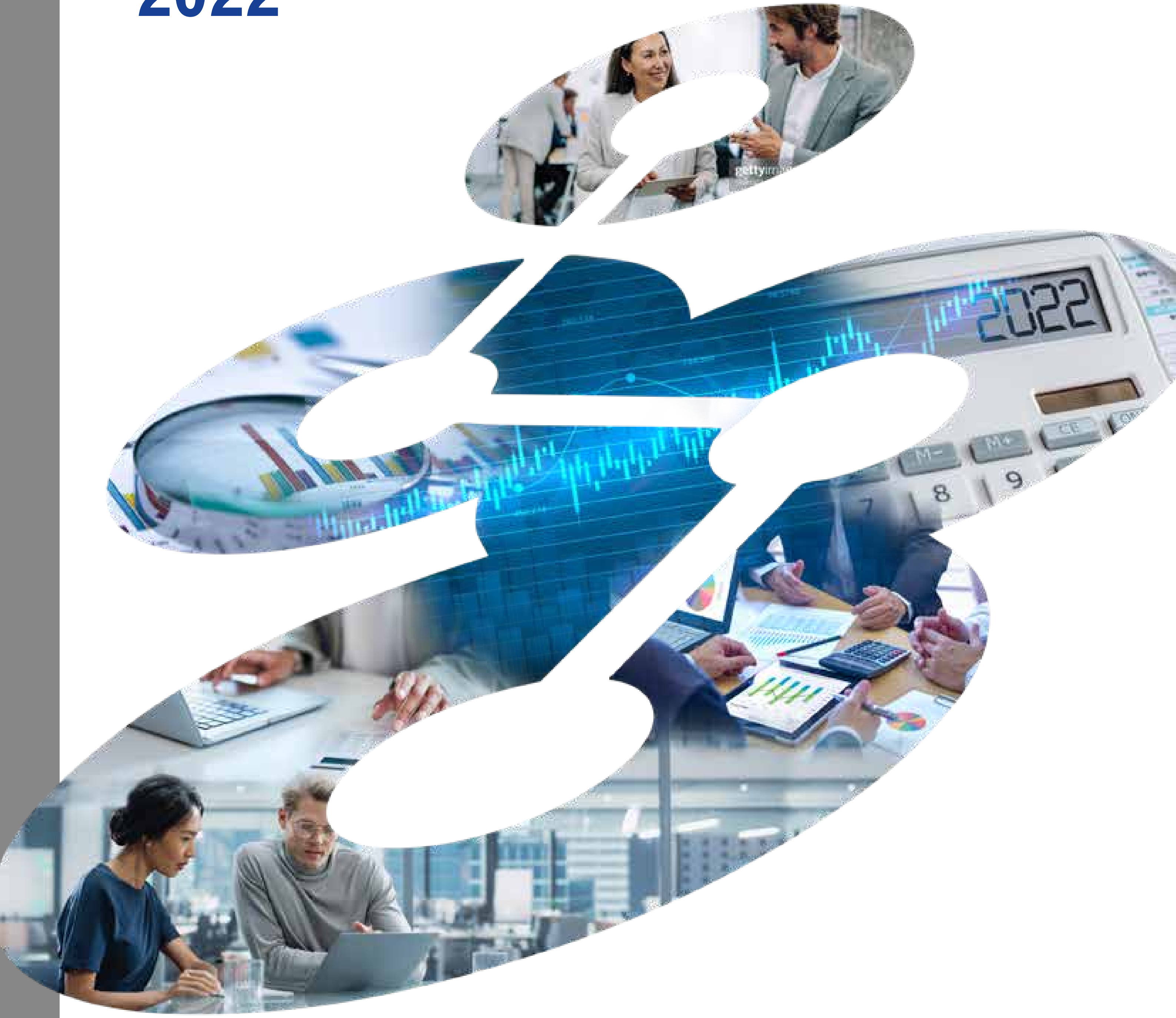
FINANCIAL STATEMENTS
2022



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SONGWON

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INTRODUCTION TO THE CONSOLIDATED FINANCIAL STATEMENTS

On the following pages (07 – 97), consolidated financial statements for the year 2022 are presented. The financial statements disclosed are prepared according to International Financial Reporting Standards as adopted by the Republic of Korea ("KIFRS") and represent the statements submitted for approval to the Annual General Shareholders' Meeting on March 17, 2023 in Ulsan, Korea.

While the management of the Group is responsible for the preparation and presentation of the financial statements, the Group's independent auditor is responsible for expressing an opinion on these financial statements. The report on the consolidated financial statements – issued by our Group auditor, Ernst & Young Han Young – can be found on pages (04 – 06).

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Independent auditor's report

(English Translation of a Report Originally Issued in Korean)

The Shareholders and Board of Directors
Songwon Industrial Co., Ltd.

Opinion

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

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

Basis for opinion

We conducted our audit in accordance with Korean Standards on Auditing ("KSA"). Our responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the consolidated financial statements section of our report. We are independent of the Group in accordance with the ethical requirements that are relevant to our audit of the consolidated financial statements in the 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 of the current period. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

The Group consists of the Company, its 13 subsidiaries and a joint venture, and the volume of intragroup transactions, such as sales and purchases, are significant. Due to the significant impact of the completeness and accuracy of the elimination of intragroup transactions as well as sales and purchases and related receivables and payables on the preparation of the consolidated financial statements, we have selected this area as a key audit matter.

The main audit procedures we have performed in relation to this key audit matter are as follows:

- We performed an analytical procedure on the Group's significant intragroup sales and purchases as well as related receivables and payables of the current reporting period to prior reporting period.
- We confirmed the consistency of the major intragroup sales, purchases and related balances that are subject to elimination by comparing those to the input data used in the consolidation system.
- We reviewed whether all intragroup sales and purchases aggregated during the consolidation closing process were eliminated.

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Other matters

As explained in Note 2.20 to the consolidated financial statements, the comparative consolidated statements of comprehensive income for ended December 31, 2021 have been restated to reflect adjustments of freight costs. The adjustments have no impact on the net assets and net profit of Group as of and for year ended December 31, 2021

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 KIFRS, and for such internal control as management determines is necessary to enable the preparation of the 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.

Auditor's responsibilities for the audit of the consolidated financial statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with KSA 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 KSA, 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 and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial

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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 audits and significant audit findings, including any significant deficiencies in internal control that we identify during our audits.

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

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

The engagement partner on the audit resulting in this independent auditor's report is *Yoon, Jung Won.*

Ernst & Young Han Young

February 24, 2023

This audit report is effective as of February 24, 2023, the independent auditor's report date. Accordingly, certain material subsequent events or circumstances may have occurred during the period from the auditor's report date to the time this report is used. Such events and circumstances could significantly affect the accompanying consolidated financial statements and may result in modifications to this report.

CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

As of December 31, 2022 and 2021

Assets	Notes	**2022** Million KRW	2021 Million KRW
Non-current assets		536,604	487,268
Property, plant and equipment	6.2.2, 7, 26, 27	441,541	424,301
Right-of-use assets	6.2.2, 8	16,969	17,901
Investment properties	6.2.2, 9, 26, 27	3,456	3,467
Intangible assets	6.2.2, 10, 11, 26	11,427	9,650
Investments accounted for using the equity method	1.2.3, 12	7,818	6,466
Other non-current assets	21	30,778	6,028
Other non-current financial assets	13, 25, 32	16,030	12,068
Deferred tax assets	29	8,585	7,387
Current assets		680,707	628,381
Inventories	14, 26	377,129	335,880
Trade and other receivables	15, 25.2, 32	177,174	179,720
Income tax receivables		2,047	308
Other current assets	16	12,920	13,584
Other current financial assets	13, 25	6,677	1,145
Cash and cash equivalents	17, 25.2	104,760	97,744
Total assets		1,217,311	1,115,649
Equity and liabilities			
Equity		682,622	543,254
Non-controlling interests		–	–
Equity attributable to owners of the parent		*682,622*	*543,254*
Issued capital	18.1	12,000	12,000
Capital surplus	18.2	20,482	20,482
Reserves	18.3	29,103	28,623
Retained earnings	18.3	622,951	483,732
Other components of equity	18.4	-1,914	-1,583
Non-current liabilities		130,667	128,396
Bonds, interest-bearing loans and borrowings	19, 25, 27	65,745	60,502
Pension liability	21	2,682	5,945
Other long-term employee-related liabilities	22	9,061	8,544
Non-current lease liabilities	8, 25	14,564	15,454
Other non-current financial liabilities	23, 25	1	1
Other non-current liabilities		453	428
Deferred tax liabilities	29	38,161	37,522
Current liabilities		404,022	443,999
Interest-bearing loans and borrowings	19, 25, 26, 27	208,070	235,311
Trade and other payables	24, 25, 32	139,275	173,266
Current lease liabilities	8, 25	2,334	2,480
Other current financial liabilities	23, 25	554	689
Other current liabilities	20	5,440	4,043
Income tax payable		48,349	28,210
Total liabilities		534,689	572,395
Total equity and liabilities		1,217,311	1,115,649

CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

As of December 31, 2022 and 2021 (see note 2.3)

Assets	**2022** Thousand USD	2021 Thousand USD
Non-current assets	426,090	386,916
Property, plant and equipment	350,605	336,916
Right-of-use assets	13,474	14,214
Investment properties	2,744	2,753
Intangible assets	9,074	7,663
Investments accounted for using the equity method	6,208	5,134
Other non-current assets	24,439	4,787
Other non-current financial assets	12,729	9,583
Deferred tax assets	6,817	5,866
Current assets	540,516	498,966
Inventories	299,459	266,705
Trade and other receivables	140,685	142,707
Income tax receivables	1,625	245
Other current assets	10,259	10,786
Other current financial assets	5,302	909
Cash and cash equivalents	83,186	77,614
Total assets	966,606	885,882
Equity and liabilities		
Equity	542,036	431,371
Non-controlling interests	–	–
Equity attributable to owners of the parent	*542,036*	*431,371*
Issued capital	9,529	9,529
Capital surplus	16,264	16,264
Reserves	23,108	22,727
Retained earnings	494,655	384,106
Other components of equity	-1,520	-1,255
Non-current liabilities	103,758	101,953
Bonds, interest-bearing loans and borrowings	52,205	48,042
Pension liability	2,130	4,721
Other long-term employee-related liabilities	7,195	6,784
Non-current lease liabilities	11,565	12,271
Other non-current financial liabilities	1	1
Other non-current liabilities	360	340
Deferred tax liabilities	30,302	29,794
Current liabilities	320,812	352,558
Interest-bearing loans and borrowings	165,218	186,849
Trade and other payables	110,591	137,582
Current lease liabilities	1,853	1,969
Other current financial liabilities	440	547
Other current liabilities	4,319	3,211
Income tax payable	38,391	22,400
Total liabilities	424,570	454,511
Total equity and liabilities	966,606	885,882

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

for the years ended December 31, 2022 and 2021

	Notes	**2022** Million KRW	2021 (restated)* Million KRW
Sales	6.1, 6.2, 32	1,329,509	998,190
Cost of sales	28.5, 32	-1,027,889	-776,000
Gross profit		301,620	222,190
Selling and administration costs	28.2, 28.5, 32	-116,504	-116,476
Operating profit		185,116	105,714
Other income	28.3	3,833	6,038
Other expenses	28.4	-3,447	-7,233
Share of result from investments accounted for using the equity method	12	2,020	1,103
Finance income	28.6	63,807	27,863
Finance expenses	28.7	-70,229	-32,301
Profit before tax		181,100	101,184
Income tax expenses	29	-49,168	-29,975
Profit for the period		131,932	71,209
Other comprehensive income, net of taxes			
Net other comprehensive income to be reclassified to profit or loss in subsequent periods		*-242*	*7,863*
Gain on valuation of interest rate swaps	18.4	25	1,182
Exchange differences on translation of foreign operations	18.4	-267	6,681
Net other comprehensive income not to be reclassified to profit or loss		*12,478*	*9,270*
Losses on valuation of financial assets at FVOCI	18.4	-89	-252
Re-measurement gain on defined benefit plans	18.4, 21	12,567	9,522
Total other comprehensive income, net of taxes		12,236	17,133
Total comprehensive income		144,168	88,342
Profit for the period attributable to:			
Owners of the parent	30	131,932	72,273
Non-controlling interests		–	-1,064
Profit for the period		131,932	71,209
Total comprehensive income attributable to:			
Owners of the parent		144,168	89,302
Non-controlling interests		–	-960
Total comprehensive income		144,168	88,342
Earnings per share			KRW
Basic / diluted, profit for the period attributable to ordinary equity holders of the parent	30	5,497	3,011

* Refer to note 2.21 for further details

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

for the years ended December 31, 2022 and 2021 (see note 2.3)

	2022	2021 (restated)*
	Thousand USD	Thousand USD
Sales	1,055,696	792,612
Cost of sales	-816,195	-616,182
Gross profit	239,501	176,430
Selling and administration costs	-92,510	-92,488
Operating profit	146,991	83,942
Other income	3,044	4,794
Other expenses	-2,737	-5,743
Share of result from investments accounted for using the equity method	1,604	876
Finance income	50,666	22,125
Finance expenses	-55,765	-25,649
Profit before tax	143,803	80,345
Income tax expenses	-39,042	-23,802
Profit for the period	104,761	56,543
Other comprehensive income, net of taxes		
Net other comprehensive income to be reclassified to profit or loss in subsequent periods	*-193*	*6,245*
Losses on valuation of interest rate swaps	19	939
Exchange differences on translation of foreign operations	-212	5,306
Net other comprehensive income not to be reclassified to profit or loss	*9,907*	*7,361*
Losses on valuation of financial assets at FVOCI	-72	-200
Re-measurement gain on defined benefit plans	9,979	7,561
Total other comprehensive income, net of taxes	9,714	13,606
Total comprehensive income	114,475	70,149
Profit for the period attributable to:		
Owners of the parent	104,761	57,388
Non-controlling interests	–	-845
Profit for the period	104,761	56,543
Total comprehensive income attributable to:		
Owners of the parent	114,475	70,911
Non-controlling interests	–	-762
Total comprehensive income	114,475	70,149
Earnings per share	USD	USD
Basic / diluted, profit for the period attributable to ordinary equity holders of the parent	4,37	2,39

* Refer to note 2.21 for further details

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

for the years ended December 31, 2021 and 2022

	Attributable to owners of the parent				Other components of equity					
	Issued capital	Capital surplus	Reserves	Retained earnings	Cash flow hedge reserve	Fair value reserve of financial assets at FVOCI	Foreign currency translation reserve	Total	Non-controlling interests	Total equity
	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KR W
As of January 1, 2021	12,000	22,359	28,335	405,105	-1,207	-362	-7,521	458,709	4,788	463,497
Profit for the period	–	–	–	72,273	–	–	–	72,273	-1,064	71,209
Other comprehensive income	–	–	–	9,522	1,182	-252	6,577	17,029	104	17,133
Total comprehensive income	–	–	–	81,795	1,182	-252	6,577	89,302	-960	88,342
Dividends	–	–	–	-2,880	–	–	–	-2,880	–	-2,880
Appropriation to reserves	–	–	288	-288	–	–	–	–	–	–
Change in non-controlling interest due to interest increase	–	-1,877	–	–	–	–	–	-1,877	-1,230	-3,107
Change in non-controlling interest due to disposal of subsidiary*	–	–	–	–	–	–	–	–	-2,598	-2,598
As of December 31, 2021	12,000	20,482	28,623	483,732	-25	-614	-944	543,254	–	543,254
As of January 1, 2022	12,000	20,482	28,623	483,732	-25	-614	-944	543,254	–	543,254
Profit for the period	–	–	–	131,932	–	–	–	131,932	–	131,932
Other comprehensive income	–	–	–	12,567	25	-89	-267	12,236	–	12,236
Total comprehensive income	–	–	–	144,499	25	-89	-267	144,168	–	144,168
Dividends	–	–	–	-4,800	–	–	–	-4,800	–	-4,800
Appropriation to reserves	–	–	480	-480	–	–	–	–	–	–
As of December 31, 2022	12,000	20,482	29,103	622,951	–	-703	-1,211	682,622	–	682,622

* Refer to note 5 for further details

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

for the years ended December 31, 2021 and 2022 (see note 2.3)

	Attributable to owners of the parent									
					Other components of equity					
	Issued capital	Capital surplus	Reserves	Retained earnings	Cash flow hedge reserve	Fair value reserve of financial assets at FVOCI	Foreign currency translation reserve	Total	Non-controlling interests	Total equity
	Thous. USD	Thous. USD	Thous. USD	Thous. USD	Thous. USD	Thous. USD	Thous. USD	Thous. USD	Thous. USD	Thous. USD
As of January 1, 2021	9,529	17,754	22,498	321,673	-958	-287	-5,972	364,237	3,803	368,040
Profit for the period	–	–	–	57,388	–	–	–	57,388	-845	56,543
Other comprehensive income	–	–	–	7,561	939	-200	5,223	13,523	83	13,606
Total comprehensive income	–	–	–	64,949	939	-200	5,223	70,911	-762	70,149
Dividends	–	–	–	-2,287	–	–	–	-2,287	–	-2,287
Appropriation to reserves	–	–	229	-229	–	–	–	–	–	–
Change in non-controlling interest due to interest increase	–	-1,490	–	–	–	–	–	-1,490	-978	-2,468
Change in non-controlling interest due to disposal of subsidiary*	–	–	–	–	–	–	–	–	-2,063	-2,063
As of December 31, 2021	9,529	16,264	22,727	384,106	-19	-487	-749	431,371	–	431,371
As of January 1, 2022	9,529	16,264	22,727	384,106	-19	-487	-749	431,371	–	431,371
Profit for the period	–	–	–	104,761	–	–	–	104,761	–	104,761
Other comprehensive income	–	–	–	9,979	19	-72	-212	9,714	–	9,714
Total comprehensive income	–	–	–	114,740	19	-72	-212	114,475	–	114,475
Dividends	–	–	–	-3,810	–	–	–	-3,810	–	-3,810
Appropriation to reserves	–	–	381	-381	–	–	–	–	–	–
As of December 31, 2022	9,529	16,264	23,108	494,655	-	-559	-961	542,036	–	542,036

* Refer to note 5 for further details

CONSOLIDATED STATEMENTS OF CASH FLOWS

for the years ended December 31, 2022 and 2021

	Notes	**2022** Million KRW	2021 Million KRW
Profit for the period		131,932	71,209
Total adjustments	31	102,471	81,365
Changes in operating assets and liabilities	31	-98,782	-155,285
Interest received		524	247
Payments of income tax		-34,590	-15,833
Net cash flows provided by operating activities		101,555	-18,297
Proceeds from sale of property, plant and equipment	7, 31	79	438
Proceeds from sale of intangible assets	10, 31	–	2,196
Purchases of property, plant and equipment	7	-45,073	-24,296
Purchases of intangible assets	10	-3,114	-2,270
Dividends received from investments using equity method	12	581	519
Disposal of subsidiary, net of cash disposed	5	–	5,584
(Increase) / decrease in other financial assets, net		-6,064	973
Net cash flows provided by investing activities		-53,591	-16,856
Proceeds from borrowings	31	697,848	666,819
Repayments of borrowings	31	-719,157	-589,361
Payment of lease liabilities		-3,419	-3,461
Increase / (decrease) in other financial liabilities, net	31	94	-1,242
Interest paid	31	-8,183	-5,254
Acquisition of additional interest in subsidiary	1.2.1	–	-3,107
Dividends paid	18	-4,800	-2,880
Net cash flows provided by financing activities		-37,617	61,514
Increase in cash and cash equivalents		10,347	26,361
Net foreign exchange differences		-3,331	-1,401
Cash and cash equivalents as of January 1	17	97,744	72,784
Cash and cash equivalents as of December 31	17	104,760	97,744

CONSOLIDATED STATEMENTS OF CASH FLOWS

for the years ended December 31, 2022 and 2021 (see note 2.3)

	2022 Thousand USD	2021 Thousand USD
Profit for the period	104,761	56,543
Total adjustments	81,368	64,608
Changes in operating assets and liabilities	-78,438	-123,304
Interest received	416	196
Payments of income tax	-27,466	-12,572
Net cash flows provided by operating activities	80,641	-14,529
Proceeds from sale of property, plant and equipment	63	348
Proceeds from sale of intangible assets	–	1,744
Purchases of property, plant and equipment	-35,790	-19,292
Purchases of intangible assets	-2,473	-1,802
Dividends received from investments using equity method	461	412
Disposal of subsidiary, net of cash disposed	–	4,434
(Increase) / decrease in other financial assets, net	-4,815	773
Net cash flows provided by investing activities	-42,554	-13,383
Proceeds from borrowings	554,126	529,487
Repayments of borrowings	-571,046	-467,982
Payment of lease liabilities	-2,715	-2,748
Increase / (decrease) in other financial liabilities, net	75	-986
Interest paid	-6,498	-4,172
Acquisition of additional interest in subsidiary	–	-2,467
Dividends paid	-3,811	-2,287
Net cash flows provided by financing activities	-29,869	48,845
Increase in cash and cash equivalents	8,218	20,933
Net foreign exchange differences	-2,646	-1,112
Cash and cash equivalents as of January 1	77,614	57,794
Cash and cash equivalents as of December 31	83,186	77,614

1. CORPORATE INFORMATION

1.1 THE GROUP

SONGWON Industrial Group (the "Group") consists of the parent company Songwon Industrial Co., Ltd. (the "Company") and its consolidated subsidiaries as listed below. The Company was incorporated on December 15, 1965, under the law of the Republic of Korea to engage in the manufacture and commercial sale of polymer stabilizers, tin intermediates, PVC stabilizers and specialty chemicals, among others. The Company's main manufacturing plants are located in Korea in Ulsan, Maeam and Suwon and in India in Ankleshwar. The address of the registered office (Songwon Industrial Co., Ltd.) can be found at the end of the annual report.

The Company has listed its common shares on the Korea Exchange since June 1977, pursuant to the Korean Securities and Exchange Act.

1.2 SCOPE OF CONSOLIDATION

1.2.1 CHANGE IN THE SCOPE OF CONSOLIDATION

As of December 31, 2022, the scope of consolidation for the consolidated financial statements encompasses 14 entities (2021: 14 entities). Additionally, one entity is classified as a joint venture (2021: one entity) and accounted for using the equity method.

During the twelve months of 2022, no changes in the legal structure of the Group and scope of consolidation took place.

During the twelve months of 2021, the following changes in the legal structure of the Group and in scope of consolidation took place:

- Establishment of a new distribution entity in China, Songwon International-Qingdao Co., Ltd. in April 2021.

- Sale of 72% interest in Qingdao Long Fortune Songwon Chemical Co. Ltd effective as of April 30, 2021. Therefore, the Group's control in Qingdao Long Fortune Songwon Chemical Co. Ltd. ceased and the entity was deconsolidated (refer to note 5. for further details).

- Acquisition of an additional 18.5% interest in Songwon Polysys Additives-Sole Proprietorship LLC effective as of March 23, 2021. Therefore, the Group's interest in Songwon Polysys Additives-Sole Proprietorship LLC, which had already been fully consolidated as of April 1, 2014, increased from 81.5% to 100% for a consideration of 2.75 Million USD (3,107 Million KRW).

The consolidated financial statements include the financial statements of the Company and of the subsidiaries listed in the following table. The table also includes joint ventures which are accounted for using the equity method.

		2022 December 31		2021 December 31	
Consolidated entities	Location	Status	Interest	Status	Interest
Songwon Industrial Co., Ltd.	Korea	Parent		Parent	
Songwon International – Japan K.K.	Japan	Subsidiary	100%	Subsidiary	100%
Songwon Specialty Chemicals-India Pvt. Ltd.	India	Subsidiary	100%	Subsidiary	100%
Songwon International – Americas Inc.	USA	Subsidiary	100%	Subsidiary	100%
Songwon International AG	Switzerland	Subsidiary	100%	Subsidiary	100%
Songwon Group Holding AG	Switzerland	Subsidiary	100%	Subsidiary	100%
Songwon Management AG	Switzerland	Subsidiary	100%	Subsidiary	100%
Songwon ATG GmbH	Germany	Subsidiary	100%	Subsidiary	100%
Songwon Europe GmbH	Germany	Subsidiary	100%	Subsidiary	100%
Songwon Chemicals GmbH	Germany	Subsidiary	100%	Subsidiary	100%
Songwon Trading GmbH	Germany	Subsidiary	100%	Subsidiary	100%
Songwon International – Qingdao Co., Ltd.	China	Subsidiary	100%	Subsidiary	100%
Songwon International Middle East FZE	UAE	Subsidiary	100%	Subsidiary	100%
Songwon Polysys Additives-Sole Proprietorship LLC	UAE	Subsidiary	100%	Subsidiary	100%
Entity accounted for using the equity method (joint venture)					
Songwon Baifu Chemicals (Tangshan) Co., Ltd.	China	Joint venture	30%	Joint venture	30%

1.2.2 SUMMARIZED STATEMENTS OF FINANCIAL POSITION AND COMPREHENSIVE INCOME OF SUBSIDIARIES

The summarized statements of financial position and comprehensive income of subsidiaries are as follows:

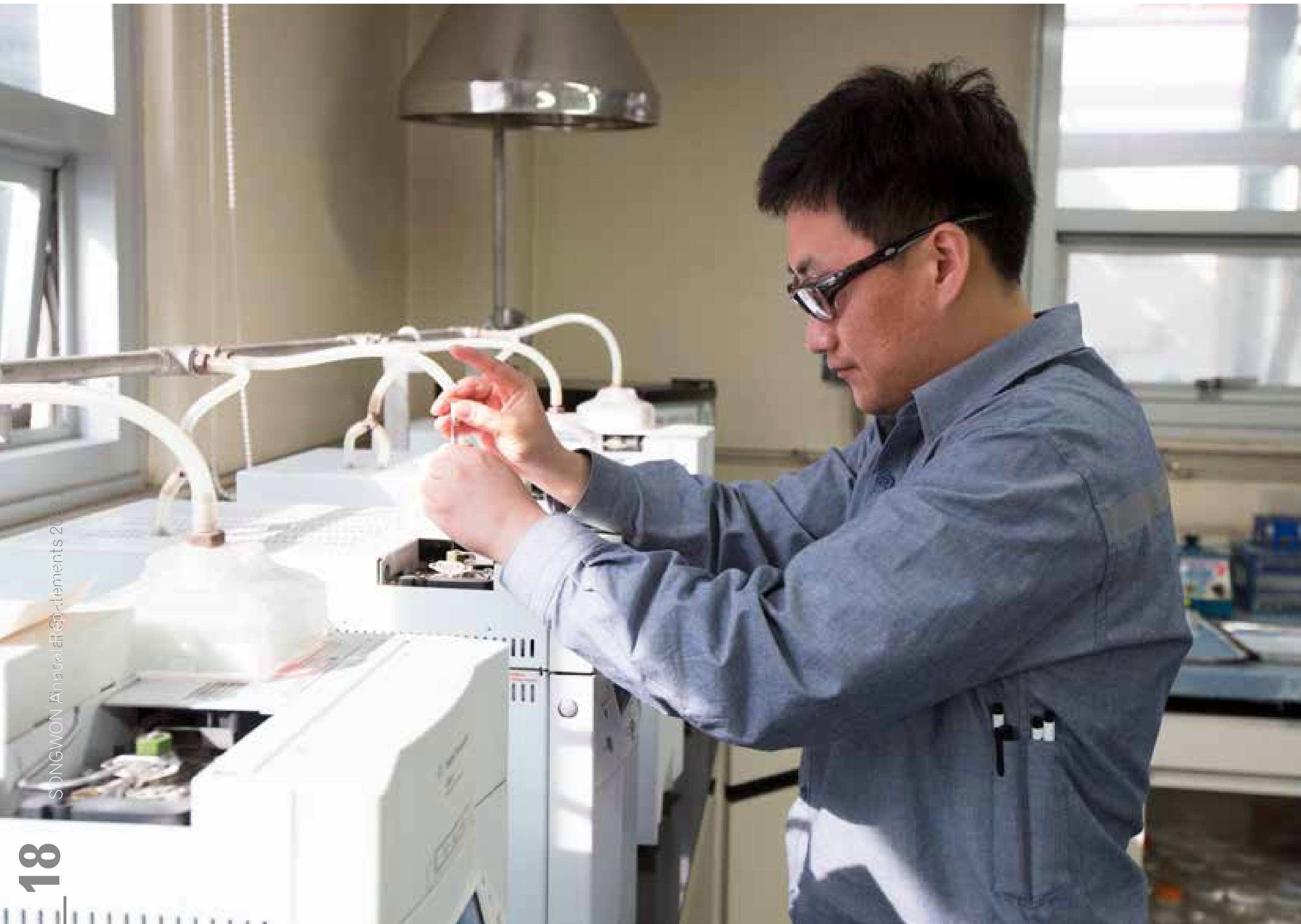
2022 as of December 31	**Total assets** Million KRW	**Total liabilities** Million KRW	**Total equity** Million KRW	**Total revenue** Million KRW	**Net income** Million KRW	**Total comp. income** Million KRW
Songwon International – Japan K.K.	62,789	50,664	12,125	139,524	870	870
Songwon Specialty Chemicals-India Pvt. Ltd.	50,388	9,531	40,857	31,651	3,054	3,161
Songwon International – Americas Inc.	134,021	94,813	39,208	333,753	5,851	5,851
Songwon International AG	127,717	97,458	30,259	338,812	7,519	7,947
Songwon Group Holding AG	134,625	4,125	130,500	–	14,211	14,211
Songwon Management AG	23,284	15,103	8,181	–	2,010	5,053
Songwon-ATG GmbH	7,539	3,769	3,770	9,051	551	551
Songwon Europe GmbH	2,051	1,821	230	4,736	166	166
Songwon Chemicals GmbH	92	7	85	1,065	24	24
Songwon Trading GmbH	81	6	75	944	19	19
Songwon International – Qingdao Co., Ltd.	10,648	6,213	4,435	26,336	729	729
Songwon International – Middle East FZE	10,517	7,215	3,302	34,771	1,851	1,851
Songwon Polysys Additives – Sole Proprietorship LLC	34,787	11,442	23,345	43,369	1,956	1,956
2021 as of December 31						
Songwon International - Japan K.K.	49,060	36,729	12,331	95,047	1,504	1,504
Songwon Specialty Chemicals-India Pvt. Ltd.	50,735	10,916	39,819	30,152	5,836	5,944
Songwon International - Americas Inc.	109,679	76,476	33,203	212,348	5,347	5,347
Songwon International AG	104,526	75,276	29,250	270,572	18,611	19,117
Songwon Group Holding AG	127,741	4,318	123,423	–	11,736	11,736
Songwon Management AG	22,387	19,545	2,842	–	-1,196	4,523
Songwon-ATG GmbH	7,817	3,713	4,104	8,894	301	301
Songwon Europe GmbH	162	15	147	1,336	33	33
Songwon Chemicals GmbH	139	4	135	1,145	26	26
Songwon Trading GmbH	113	4	109	942	17	17
Qingdao Long Fortune Songwon Chemical Co., Ltd.	13,847	9,462	4,385	15,333	690	690
Songwon International – Middle East FZE	10,165	7,149	3,016	22,957	1,579	1,579
Songwon Polysys Additives – Sole Proprietorship LLC	34,788	14,504	20,284	24,903	406	406

1.2.3 INTEREST IN JOINT VENTURES

The Group has a 30% interest in Songwon Baifu Chemicals (Tangshan) Co., Ltd., classified as a jointly controlled entity which primarily engages in the production of thioesters. Determination was driven by the contractually agreed sharing of control with regard to relevant activities, requiring unanimous consent of the control-sharing parties.

The summarized statements of financial position and summarized statements of comprehensive income of joint ventures (accounted for using the equity method) are as follows:

Statement of financial position	Cash and cash equivalents Million KRW	Total current assets Million KRW	Total non-current assets Million KRW	Current financial liabilities Million KRW	Total current liabilities Million KRW	Non-current financial liabilities Million KRW	Total non-current liabilities Million KRW	Equity Million KRW	Carrying amount Million KRW
Songwon Baifu Chemicals (Tangshan) Co., Ltd.	1,803	10,744	12,954	1,670	2,056	58	89	21,553	6,466
December 31, 2021	1,803	10,744	12,954	1,670	2,056	58	89	21,553	6,466
Songwon Baifu Chemicals (Tangshan) Co., Ltd.	5,981	15,765	13,722	2,363	3,366	28	62	26,059	7,818
December 31, 2022	5,981	15,765	13,722	2,363	3,366	28	62	26,059	7,818



Statement of comprehensive income	Revenue Million KRW	Depreciation & Amortization Million KRW	Interest income Million KRW	Interest expense Million KRW	Profit before tax Million KRW	Income tax expenses Million KRW	Profit for the period Million KRW	Other comp. income Million KRW	Total comp. income Million KRW
Songwon Baifu Chemicals (Tangshan) Co., Ltd.	31,813	-163	23	-6	4,944	-1,269	3,675	-100	3,575
December 31, 2021	31,813	-163	23	-6	4,944	-1,269	3,675	-100	3,575
Songwon Baifu Chemicals (Tangshan) Co., Ltd.	43,077	-176	4	-5	8,723	-1,990	6,733	-290	6,443
December 31, 2022	43,077	-176	4	-5	8,723	-1,990	6,733	-290	6,443

The investment in the joint venture is accounted for as using the equity method. The joint venture is continuing its operations as of December 31, 2022, and its reporting period is the same as that of the Group. In 2022, dividends of 581 Million KRW were received from Songwon Baifu Chemicals (Tangshan) Co., Ltd. (2021: 519 Million KRW), refer to note 12.

1.2.4 NON-CONTROLLING INTERESTS

No transactions with non-controlling interest related to acquisitions or disposals took place during the reporting period 2022.

In 2021, The Group acquired an additional 18.5% interest in Songwon Polysys Additives-Sole Proprietorship LLC as of March 23, 2021 and increased its shareholding to 100%. In addition, the sale of the 72% interest in Qingdao Long Fortune Songwon Chemical Co. Ltd., effective April 30, 2021, led to loss of control in Qingdao Long Fortune Songwon Chemical Co. Ltd. and the entity was deconsolidated (refer to note 5). As of December 31, 2021, the Group disposed all of its non-controlling interests. The net loss attributable to the non-controlling interests for the year 2021 amounted to 1,064 Million KRW.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

2.1 BASIS OF PREPARATION

The Group prepares statutory financial statements in the Korean language in accordance with International Financial Reporting Standards as adopted by the Republic of Korea ("KIFRS") enacted by the *Act on External Audit of Stock Companies*.

The consolidated financial statements have been prepared on a historical cost basis, except for certain items, such as financial instruments, which are mentioned separately in the following accounting principles. The consolidated financial statements are presented in Korean won (KRW) and all values are rounded to the nearest million (000,000), except when otherwise indicated.

The Group maintains its official accounting records in Korean won. In the event of any differences in the interpretation of the consolidated financial statements or the independent auditor's report thereon, the Korean version, which is used for regulatory reporting purposes, shall prevail.

2.2 BASIS OF CONSOLIDATION

The consolidated financial statements comprise the financial statements of the Group and its subsidiaries as of December 31, 2022. Control is achieved when the Group is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee. Specifically, the Group controls an investee if, and only if, the Group has:

- Power over the investee (i.e., existing rights that give it the current ability to direct the relevant activities of the investee)
- Exposure or rights to variable returns from its involvement with the investee
- The ability to use its power over the investee to affect its returns

Generally, there is a presumption that a majority of voting rights results in control. To support this presumption and when the Group has less than a majority of the voting or similar rights of an investee, the Group considers all relevant facts and circumstances in assessing whether it has power over an investee, including:

- The contractual arrangement with the other vote holders of the investee
- Rights arising from other contractual arrangements
- The Group's voting rights and potential voting rights

The Group reassesses whether or not it controls an investee if facts and circumstances indicate that there are changes to one or more of the three elements of control. Consolidation of a subsidiary begins when the Group obtains control over the subsidiary and ceases when it loses control of the subsidiary. Assets, liabilities, income and expenses of a subsidiary acquired or disposed of during the year are included in the statements of comprehensive income from the date that the Group gains control until the date that it ceases to control the subsidiary.

Profit or loss and each component of other comprehensive income (OCI) are attributed to the equity holders of the parent of the Group and to the non-controlling interests, even if this results in the non-controlling interests having a deficit balance. When necessary, adjustments are made to the financial statements of subsidiaries to align their accounting policies with the Group's accounting policies. All intra-group assets and liabilities, equity, income, expenses and cash flows relating to transactions between members of the Group are eliminated in full on consolidation.

A change in the ownership interest of a subsidiary, without a loss of control, is accounted for as an equity transaction.

2.3 CONVENIENCE TRANSLATION INTO UNITED STATES DOLLAR AMOUNTS

The parent company operates primarily in Korean won and its official accounting records are maintained in KRW. The USD amounts provided in the financial statements represent supplementary information solely for the convenience of the reader. All KRW amounts are expressed in USD at the rate of 1,259.38 KRW to 1 USD, the exchange rate in effect on December 31, 2022. Such a presentation is not in accordance with generally accepted accounting principles and should not be construed as a representation that the KRW amounts shown could be readily converted, realized or settled in USD at this or at any other rate.

2.4. BUSINESS COMBINATIONS AND GOODWILL

Business combinations are accounted for using the acquisition method. The cost of an acquisition is measured as the aggregate of the consideration transferred, which is measured at acquisition date fair value, and the amount of any non-controlling interests in the acquiree. For each business combination, the Group elects whether to measure the non-controlling interests in the acquiree at fair value or at the proportionate share of the acquiree's identifiable net assets. Acquisition-related costs are expensed as incurred and included in administrative expenses.

When the Group acquires a business, it assesses the financial assets and liabilities assumed for appropriate classification and designation in accordance with the contractual terms, economic circumstances and pertinent conditions as of the acquisition date. This includes the separation of embedded derivatives in host contracts by the acquiree.

Goodwill is initially measured at cost, being the excess of the aggregate of the consideration transferred and the amount recognized for non-controlling interests, and any previous interest held over the net identifiable assets acquired and liabilities assumed. If the fair value of the net assets acquired is in excess of the aggregate consideration transferred, the Group reassesses whether it has correctly identified all of the assets acquired as well as all of the liabilities assumed, and reviews the procedures used to measure the amounts to be recognized at the acquisition date. If the reassessment still results in an excess of the fair value of net assets acquired over the aggregated consideration transferred, then the gain is recognized in profit or loss.

After initial recognition, goodwill is measured at cost less any accumulated impairment losses. For the purpose of impairment testing, goodwill acquired in a business combination is, from the acquisition date, allocated to each of the Group's cash-generating units (CGU) that are expected to benefit from the combination, irrespective of whether other assets or liabilities of the acquiree are assigned to those units.

Where goodwill has been allocated to a CGU and part of the operation within that unit is disposed of, the goodwill associated with the disposed operation is included in the carrying amount of the operation when determining the gain or loss on disposal. Goodwill disposed in these circumstances is measured based on the relative values of the disposed operation and the portion of the CGU retained.

2.5 INTEREST IN JOINT ARRANGEMENTS

Joint ventures

A joint venture is a type of joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the joint venture. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require unanimous consent of the parties sharing control. The considerations made in determining joint control are similar to those necessary to determine control over subsidiaries.

The Group's investments in its joint ventures are accounted for using the equity method. Under the equity method, the investment in a joint venture is initially recognized at cost. The carrying amount of the investment is adjusted to recognize changes in the Group's share of net assets of the joint venture since the acquisition date.

The statements of comprehensive income reflect the Group's share of the results of operations of the joint venture. Any change in OCI of those investees is presented as part of the Group's OCI. In addition, when there has been a change recognized directly in the equity of a joint venture, the Group recognizes its share of any changes, when applicable, in the statements of changes in equity. Unrealized gains and losses resulting from transactions between the Group and the joint venture are eliminated to the extent of the interest in the joint venture.

The aggregate of the Group's share of profit or loss in a joint venture is shown on the face of the statements of profit or loss outside operating profit and represents profit or loss after tax and non-controlling interests in the subsidiaries of the joint venture.

The financial statements of the joint venture are prepared for the same reporting period as the Group. When necessary, adjustments are made to align the accounting policies with those of the Group.

At each reporting date, the Group determines whether there is objective evidence that the investment in the joint venture is impaired. If there is such evidence, the Group calculates the amount of impairment as the difference between the recoverable amount of the joint venture and its carrying value, and then recognizes the loss as "Share of profit of a joint venture" in the statements of comprehensive income.

Upon loss of significant influence over the joint venture, the Group measures and recognizes any retained investment at its fair value. Any difference between the carrying amount of the joint venture – upon loss of significant influence or joint control – and the fair value of the retained investment and proceeds from disposal is recognized in profit or loss.

Joint operations

A joint operation is defined as an arrangement in which the parties with joint control have rights to the assets and obligations for the liabilities relating to that arrangement. In respect of its interest in a joint operation, a joint operator must recognize all of its assets, liabilities, revenues and expenses, including its relative share of jointly controlled assets, liabilities, revenue and expenses.

The considerations made in determining joint control are similar to those necessary to determine control over subsidiaries.

2.6 FOREIGN CURRENCY TRANSLATION

The consolidated financial statements are presented in KRW, which is the parent company's functional currency. Each entity in the Group determines its own functional currency, and items included in the financial statements of each entity are measured using that functional currency.

Transactions in foreign currencies are initially recorded by the companies at their respective functional currency rates prevailing at the date of the transaction. Monetary assets and liabilities denominated in foreign currencies are retranslated at the functional currency spot rate of exchange ruling at the reporting date. Non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the exchange rates as at the dates of the initial transactions. Non-monetary items measured at fair value in a foreign currency are translated using the exchange rates at the date when the fair value is determined.

The assets, including goodwill and liabilities of foreign subsidiaries, where the functional currency is other than the KRW, are translated using the exchange rate at the end of the reporting period, while the statements of comprehensive income are translated using the average exchange rates during the period. Differences arising from such translations are recognized within equity and reclassified to net income when the gain or loss on disposal of the foreign subsidiary is recognized.

In determining the spot exchange rate to use on initial recognition of the related asset, expense or income (or part of it) on the derecognition of a non-monetary asset or non-monetary liability relating to advance consideration, the date of the transaction is the date on which the Group initially recognizes the non-monetary asset or non-monetary liability arising from the advance consideration. If there are multiple payments or receipts in advance, the Group determines the transaction date for each payment or receipt of advance consideration.

2.7 PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment are valued at cost less accumulated depreciation and accumulated impairment losses. If the recognition criteria are met, such costs include the cost of replacing part of the property, plant and equipment and borrowing costs for long-term construction projects. Other repair and maintenance costs are recognized in the statements of comprehensive income as incurred. If the costs of certain components of an item of property, plant and equipment are significant in relation to the total cost of the item, they are accounted for and depreciated separately.

Depreciation expenses are calculated by using the straight-line method. The following useful lives are assumed:

Land	No depreciation
Buildings	18-60 years
Structures	10-40 years
Machinery	10-20 years
Other	1-39 years

Residual values and useful lives are reviewed annually and adjusted accordingly if expectations differ from previous estimates.

The gain or loss arising from the derecognition of a property, plant or equipment shall be determined as the difference between the net disposal proceeds and the carrying amount of the asset. It shall be recognized in the income statement when the asset is derecognized.

2.8 INTANGIBLE ASSETS

Intangible assets acquired separately are measured on initial recognition at cost. The cost of intangible assets acquired in a business combination is its fair value as at the date of acquisition. Following initial recognition, intangible assets are carried at cost less any accumulated amortization and accumulated impairment losses.

Intangible assets with useful finite lives are amortized over the useful economic life and assessed for impairment whenever there is an indication that the intangible asset may be impaired. The amortization period and the amortization method for an intangible asset with a finite useful life are reviewed at least at the end of each reporting period. Changes in the expected useful life, or the expected consumption pattern of future economic benefits embodied in the asset, are accounted for by changing the amortization period or method, as appropriate, and are treated as changes in accounting estimates. The amortization expense on intangible assets with finite lives is recognized in the income statement under cost of sales and selling and administration costs in the expense category that is consistent with the function of the intangible assets.
Intangible assets with indefinite useful lives (such as goodwill and memberships) are not amortized, but are tested for impairment annually either individually, or at the cash-generating unit level. The assessment of

indefinite life is reviewed annually to determine whether the indefinite life continues to be supportable. If not, the change in useful life from indefinite to finite is made on a prospective basis.

Gains or losses arising from derecognition of an intangible asset are measured as the difference between the net disposal proceeds and the carrying amount of the asset and are recognized in the income statement when the asset is derecognized.

Intangible assets with finite useful lives are amortized using the straight-line method with the following useful lives:

Software	3-10 years
Industrial rights	10 years

2.9 INVESTMENT PROPERTY

The Group classifies the property to earn rentals or for capital appreciation, or both, as investment properties. As investment properties are accounted for using a cost model, the same accounting policies applied to property, plant and equipment are used for their accounting treatment, except for their classification and presentation.

2.10 LEASES

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

Group as a lessee

The Group applies a single recognition and measurement approach for all leases, except for short-term leases and leases of low-value assets. The Group recognizes lease liabilities to make lease payments and right-of-use assets representing the right to use the underlying assets.

- *Right-of-use assets*
  The Group recognizes right-of-use assets at the commencement date of the lease (i.e., the date the underlying asset is available for use). Right-of-use assets are measured at cost, less any accumulated depreciation and impairment losses, and adjusted for any re-measurement of lease liabilities. The cost of right-of-use assets includes the amount of lease liabilities recognized, initial direct costs incurred, and lease payments made at or before the commencement date less any lease incentives received. Unless the Group is reasonably certain to obtain ownership of the leased asset at the end of the lease term, the recognized right-of-use assets are depreciated on a straight-line basis over the shorter of its estimated useful life and the lease term. Right-of-use assets are subject to impairment (see note 8).

- *Lease liabilities*
  At the commencement date of the lease, the Group recognizes lease liabilities measured at the present value of lease payments to be made over the lease term. The lease payments include fixed payments (including in-substance fixed payments) less any lease incentives receivable and amounts expected to be paid under residual value guarantees. The lease payments also include the exercise price of a purchase option reasonably certain to be exercised by the Group and payments of penalties for terminating a lease, if the lease term reflects the Group exercising the option to terminate (see note 25.3.3).

In calculating the present value of lease payments, the Group uses the incremental borrowing rate at the lease commencement date if the interest rate implicit in the lease is not readily determinable. The carrying amount of the right-of-use asset and lease liability is re-measured if there is a modification, a change in the lease term, a change in the in-substance fixed lease payments or a change in the assessment to purchase the underlying asset.

- *Short-term leases and leases of low-value assets*
  The Group applies the short-term lease recognition exemption to its short-term leases of tools and other equipment (i.e., those leases that have a lease term of twelve months or less from the commencement date and do not contain a purchase option). It also applies the lease of low-value assets recognition exemption to leases of office equipment that are considered of low value (i.e., below 5,000 USD). Lease payments on short-term leases and leases of low-value assets are recognized as an expense on a straight-line basis over the lease term.

- *Significant judgement in determining the lease term of contracts with renewal options*
  The Group determines the lease term as the non-cancellable term of the lease, together with any periods covered by an option to extend the lease if it is reasonably certain to be exercised, or any periods covered by an option to terminate the lease, if it is reasonably certain not to be exercised. The Group has the option, under some of its leases to lease the assets for additional terms. The Group applies judgement in evaluating whether it is reasonably certain to exercise the option to renew. That is, it considers all relevant factors that create an economic incentive for it to exercise the renewal. After the commencement date, the Group reassesses the lease term if there is a significant event or change in circumstances that is within its control and affects its ability to exercise (or not to exercise) the option to renew (e.g., a change in business strategy).

Group as a lessor

Leases in which the Group does not transfer substantially all the risks and rewards incidental to ownership of an asset are classified as operating leases. Rental income arising is accounted for on a straight-line basis over the lease terms and is included in revenue in the statement of profit or loss due to its operating nature. Initial direct costs incurred in negotiating and arranging an operating lease are added to the carrying amount of the leased asset and recognized over the lease term on the same basis as rental income. Contingent rents are recognized as revenue in the period in which they are earned. In the financial year 2022, the Group has not entered into lease agreements as a lessor.

2.11 IMPAIRMENT OF NON-FINANCIAL ASSETS

The Group reviews non-financial assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. If any indication exists, or when annual impairment testing for assets, such as membership is required, the Group estimates the asset's recoverable amount. Recoverability of assets is measured by the comparison of the carrying amount of the asset to the recoverable amount, which is the higher of the asset's value in use and its fair value less costs to sell. If assets do not generate cash inflows that are largely independent of those from other assets or groups of assets, the impairment test is not performed at an individual asset level; instead, it is performed at the level of the cash-generating unit (CGU) that the asset belongs to.

Where the carrying amount of an asset or CGU exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. In determining fair value less costs to sell, recent market transactions are taken into account, if available. If no such transactions can be identified, an appropriate valuation model is used.
For assets excluding goodwill, an assessment is made at each reporting date as to whether there is any indication that previously recognized impairment losses may no longer exist or may have decreased. If such an indication

exists, the Group estimates the asset or cash-generating unit's recoverable amount. A previously recognized impairment loss is reversed only if there has been a change in the assumptions used to determine the asset's recoverable amount since the last impairment loss was recognized. The reversal is limited, so that the carrying amount of the asset does not exceed its recoverable amount, nor exceed the carrying amount that would have been determined, net of depreciation, had no impairment loss been recognized for the asset in prior years. Such a reversal is recognized in the income statement.

The following criteria are also applied in assessing impairment of specific assets:

Goodwill

Goodwill is tested for impairment annually as of December 31, and whenever there are events or changes in circumstances (triggering events), which suggest that the carrying amount may not be recoverable. Goodwill is carried at cost less accumulated impairment losses.

For the purpose of impairment testing, goodwill acquired in a business combination is allocated to the (groups of) cash-generating unit(s) that is expected to benefit from the synergies of the business combination. If the carrying amount of the cash-generating unit(s), to which the goodwill is allocated, exceeds its recoverable amount, an impairment loss on goodwill is recognized. The recoverable amount is the higher of the cash-generating unit(s) fair value less costs to sell and its value in use.

Impairment losses relating to goodwill cannot be reversed in future periods.

Intangible assets with indefinite useful lives

Intangible assets with indefinite useful lives are tested for impairment annually as of December 31, either individually, or at the cash-generating unit level, as appropriate and when circumstances indicate that the carrying value may be impaired.

2.12 BORROWING COSTS

Borrowing costs directly attributable to the acquisition, construction or production of an asset, that requires a substantial period of time to get ready for its intended use or sale, are capitalized as part of the cost of the respective assets.

2.13 INVENTORIES

Inventory is valued at the lower of the acquisition or production cost and net realizable value, cost being generally determined on the basis of a weighted average. Production costs comprise direct material and labor and applicable manufacturing overheads, including depreciation charges based on normal operating capacity. Net realizable value is the estimated selling price in the ordinary course of business, less the estimated costs of completion and selling expenses.

2.14 CASH AND CASH EQUIVALENTS

Cash and cash equivalents in the statements of financial position comprise cash at banks, as well as on hand and short-term deposits with a maturity of three months or less.

2.15 PROVISIONS

A provision is 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 economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation. If the effect is material, provisions are recognized at present value by discounting the expected future cash flows at a pre-tax rate that reflects current market assessments of the time value of money.

Greenhouse gas emissions

The Group receives free emission rights as a result of emission trading schemes. The rights are received on an annual basis and, in return, the Group is required to remit rights equal to its actual emissions. The Group has adopted the net liability approach to the emission rights granted. Therefore, a provision is recognized only when actual emissions exceed the emission rights granted and still held. The emission costs are recognized as other operating costs. Where emission rights are purchased from other parties, they are recorded at cost, and treated as a reimbursement right, whereby they are matched to the emission liabilities and re-measured to fair value. The changes in fair value are recognized in the statement of profit or loss and other comprehensive income.

2.16 PENSIONS AND OTHER LONG-TERM EMPLOYMENT BENEFITS

Pensions

The Group operates three defined benefit pension plans: one in Korea, one in Switzerland and one in India. The cost of providing benefits under the defined benefit plan is determined using the projected unit credit method.

Re-measurements, comprising actuarial gains and losses, the effect of the asset ceiling, excluding net interest and the return on plan assets (excluding net interest), are recognized immediately in the statements of financial position with a corresponding debit or credit to retained earnings through OCI in the period in which they occur. Re-measurements are not reclassified to profit or loss in subsequent periods.

Past service costs are recognized in profit or loss on the earlier of the date:

- the plan amendment or curtailment
- that the Group recognizes restructuring-related costs

Net interest is calculated by applying the discount rate to the net defined benefit liability or asset. The pension expenses are recognized in the income statement under cost of sales and selling and administration costs.

Other long-term employment benefits

The parent company also implements a bonus plan designed to present a prescribed quantity of gold and entitles compensated vacation to long-term service employees. Accounting policies of the bonus plan are mostly the same as the defined benefit plan, except that re-measurements are recognized immediately in profit or loss.

2.17 TAXES

Current income tax

Current income tax assets and liabilities for the current period are measured at the amount expected to be recovered from or paid to the taxation authorities. The tax rates and tax laws used to compute the amount are those that are enacted, or substantively enacted, at the reporting date in the countries where the Group operates and generates taxable income.

Deferred tax

Deferred tax is provided using the liability method on temporary differences at the reporting date between the tax basis of assets and liabilities, and their carrying amounts for financial reporting purposes.

Deferred tax liabilities are recognized for all taxable temporary differences, except:

- where the deferred tax liability arises from the initial recognition of goodwill, or of an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit, nor taxable profit or loss;
- with respect to taxable temporary differences associated with investments in subsidiaries, associates and interests in joint ventures, where the timing of the reversal of the temporary differences can be controlled and it is probable that the temporary differences will not reverse in the foreseeable future.

Deferred tax assets are recognized for all deductible temporary differences, carry forward of unused tax credits and unused tax losses, to the extent that it is probable that taxable profit will be available against which the deductible temporary differences, and the carry forward of unused tax credits and unused tax losses can be utilized, except:

- where the deferred tax asset relating to the deductible temporary difference arises from the initial recognition of an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit, nor taxable profit or loss;
- with respect to deductible temporary differences associated with investments in subsidiaries, associates and interests in joint ventures, deferred tax assets are recognized only to the extent that it is probable that the temporary differences will reverse in the foreseeable future, and taxable profit will be available against which the temporary differences can be utilized.

The carrying amount of deferred tax assets is reviewed at each reporting date and reduced to the extent that it is no longer probable that sufficient taxable profit will be available to allow all or part of the deferred tax asset to be utilized. 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 allow the deferred tax asset to be recovered. Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the year when the asset is realized or the liability is settled, based on tax rates (and tax laws) that have been enacted or substantively enacted at the reporting date.

Deferred tax relating to items recognized outside profit or loss is recognized outside profit or loss. Deferred tax items are recognized in correlation to the underlying transaction, either in other comprehensive income, or directly in equity.

Deferred tax assets and deferred tax liabilities are offset, if a legally enforceable right exists to set off current tax assets against current income tax liabilities and the deferred taxes relate to the same taxable entity and the same taxation authority.

2.18 REVENUE FROM CONTRACTS WITH CUSTOMERS

The Group's business is the manufacture and commercial sale of antioxidants, stabilizers and polyurethane. Revenue from contracts with customers is recognized when control of the goods or services are transferred to the customer at an amount that reflects the consideration to which the Group expects to be entitled in exchange for those goods or services. The Group has generally concluded that it is the principal in its revenue arrangements, except for the agency services below, because it typically controls the goods or services before transferring them to the customer.

Sales of Goods

The Group has concluded that revenue from sale of goods should be recognized at the point in time when control of the asset is transferred to the customer, generally on delivery of the goods.

Sale of services

The Group provides transportation service in combination with the sales of goods. The services can be provided by others and are not significantly modified or customized. There are two performance obligations in a contract for bundled sales of goods and transportation services, because its promises to transfer goods and provide transportation services, are capable of being distinct and separately identifiable. The Group allocates the transaction price based on the relative stand-alone selling prices of goods and transportation services. The Group concluded that revenue for transportation services, will be recognized over time because the customer simultaneously receives and consumes the benefits provided by the Group.

Contract balances

1) Contract assets

A contract asset is the right to consideration in exchange for goods or services transferred to the customer. If the Group performs by transferring goods or services to a customer before the customer pays a consideration or before payment is due, a contract asset is recognized for the earned consideration that is conditional.

2) Trade receivables

A receivable represents the Group's right to an amount of consideration that is unconditional (i.e., only the passage of time is required before payment of the consideration is due). Refer to accounting policies of financial assets in the note 2.19.

3) Contract liabilities

A contract liability is the obligation to transfer goods or services to a customer for which the Group has received consideration (or an amount of consideration is due) from the customer. If a customer pays consideration before the Group transfers goods or services to the customer, a contract liability is recognized when the payment is made, or the payment is due (whichever is earlier). Contract liabilities are recognized as revenue when the Group performs under the contract.

2.19 FINANCIAL INSTRUMENTS

A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity.

Financial assets

Financial assets are classified, at initial recognition, as subsequently measured at amortized cost, fair value through other comprehensive income (FVOCI), and fair value through profit or loss (FVtPL).

The classification of financial assets at initial recognition depends on the financial asset's contractual cash flow characteristics and the Group's business model for managing them: With the exception of trade receivables that do not contain a significant financing component, or for which the Group has applied the practical expedient, the Group initially measures a financial asset at its fair value plus, in the case of a financial asset not at fair value through profit or loss, transaction costs.

In order for a financial asset to be classified and measured at amortized cost or FVOCI, it needs to give rise to cash flows that are, solely payments of principal and interest (SPPI), on the principal amount outstanding. This assessment is referred to as the SPPI test and is performed at an instrument level.

The Group's business model for managing financial assets refers to how it manages its financial assets in order to generate cash flows. The business model determines whether cash flows will result from collecting contractual cash flows, selling the financial assets, or both.

Purchases or sales of financial assets that require delivery of assets within a time frame established by regulation or convention in the marketplace (regular way trades), are recognized on the trade date, i.e., the date that the Group commits to purchase or sell the asset.

1) Subsequent measurement

For purposes of subsequent measurement, financial assets are classified in four categories:

- Financial assets at amortized cost (debt instruments);
- Financial assets at FVOCI with recycling of cumulative gains and losses (debt instruments);
- Financial assets designated at FVOCI with no recycling of cumulative gains and losses upon derecognition (equity instruments);
- Financial assets at FVtPL.

2) Financial assets at amortized cost (debt instruments)

This category is the most relevant to the Group. The Group measures financial assets at amortized cost if both of the following conditions are met:

- the financial asset is held within a business model with the objective to hold financial assets in order to collect contractual cash flows; and
- the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Financial assets at amortized cost are subsequently measured using the effective interest rate (EIR) method and are subject to impairment. Gains and losses are recognized in profit or loss when the asset is derecognized, modified or impaired.

3) Financial assets at FVOCI (debt instruments)

The Group measures debt instruments at FVOCI if both of the following conditions are met:

- the financial asset is held within a business model with the objective of both holding to collect contractual cash flows and selling; and
- the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

For debt instruments at FVOCI, interest income, foreign exchange revaluation and impairment losses or reversals are recognized in the statement of profit or loss and computed in the same manner as for financial assets measured at amortized cost. The remaining fair value changes are recognized in OCI. Upon derecognition, the cumulative fair value change recognized in OCI is recycled to profit or loss. The Group's debt instruments at FVOCI includes investments in quoted debt instruments included under other non-current financial assets.

4) Financial assets designated at FVOCI (equity instruments)

Upon initial recognition, the Group can elect to classify irrevocably its equity investments as equity instruments designated at FVOCI when they meet the definition of equity under KIFRS 1032 and are not held for trading. The classification is determined on an instrument-by-instrument basis.

Gains and losses on these financial assets are never recycled to profit or loss. Dividends are recognized as other income in the statement of profit or loss when the right of payment has been established, except when the Group benefits from such proceeds as a recovery of part of the cost of the financial asset, in which case, such gains are recorded in OCI. Equity instruments designated at FVOCI are not subject to impairment assessment.

The Group elected to classify irrevocably its non-listed equity investments under this category.

5) Financial assets at FVtPL

Financial assets at FVtPL include financial assets held for trading, financial assets designated upon initial recognition at FVtPL, or financial assets mandatorily required to be measured at fair value. Financial assets are classified as held for trading if they are acquired for the purpose of selling or repurchasing in the near term. Derivatives, including separated embedded derivatives, are also classified as held for trading unless they are designated as effective hedging instruments. Financial assets with cash flows that are not solely payments of principal and interest are classified and measured at FVtPL, irrespective of the business model. Notwithstanding the criteria for debt instruments to be classified at amortized cost or at FVOCI, as described above, debt instruments may be designated at FVtPL on initial recognition if doing so eliminates, or significantly reduces, an accounting mismatch.

Financial assets at FVtPL are carried in the statement of financial position at fair value with net changes in fair value recognized in the statement of profit or loss.

A derivative embedded in a hybrid contract, with a financial liability or non-financial host, is separated from the host and accounted for as a separate derivative if: the economic characteristics and risks are not closely related to the host; a separate instrument with the same terms as the embedded derivative would meet the definition of a derivative; and the hybrid contract is not measured at FVtPL. Embedded derivatives are measured at fair value with changes in fair value recognized in profit or loss. Reassessment only occurs if there is either a change in the terms of the contract that significantly modifies the cash flows that would otherwise be required, or a reclassification of a financial asset out of the FVtPL category.

A derivative embedded within a hybrid contract containing a financial asset host is not accounted for separately. The financial asset host together with the embedded derivative is required to be classified in its entirety as a financial asset at FVtPL.

6) Derecognition

A financial asset (or, where applicable, a part of a financial asset or part of a group of similar financial assets) is primarily derecognized (i.e., removed from the Group's consolidated statement of financial position) when:

- the rights to receive cash flows from the asset have expired; or
- the Group has transferred its rights to receive cash flows from the asset or has assumed an obligation to pay the received cash flows in full without material delay to a third party under a pass-through arrangement; and either (a) the Group has transferred substantially all the risks and rewards of the asset, or (b) the Group has neither transferred nor retained substantially all the risks and rewards of the asset, but has transferred control of the asset.

After the Group has transferred its rights to receive cash flows from an asset or has entered into a pass-through arrangement, it evaluates if, and to what extent, it has retained the risks and rewards of ownership. When it has neither transferred nor retained substantially all of the risks and rewards of the asset, nor transferred control of the asset, the Group continues to recognize the transferred asset to the extent of its continuing involvement. In that case, the Group also recognizes an associated liability. The transferred asset and the associated liability are measured on a basis that reflects the rights and obligations that the Group has retained.

Continuing involvement that takes the form of a guarantee over the transferred asset is measured at the lower of the original carrying amount of the asset and the maximum amount of consideration that the Group could be required to repay.

7) Impairment of financial assets

Further disclosures relating to impairment of financial assets are also provided in the sections:

- significant accounting judgments, estimates and assumptions
- debt instruments at FVOCI
- trade and other receivables

The Group recognizes an allowance for expected credit losses (ECLs) for all debt instruments not held at FVtPL. ECLs are based on the difference between the contractual cash flows due in accordance with the contract and all the cash flows that the Group expects to receive, discounted at an approximation of the original effective interest rate. The expected cash flows will include cash flows from the sale of collateral held or other credit enhancements that are integral to the contractual terms.

ECLs are recognized in two stages. For credit exposures for which there has not been a significant increase in credit risk since initial recognition, ECLs are provided for credit losses that result from default events that are possible within the next 12-months (a 12-month ECL). For those credit exposures for which there has been a significant increase in credit risk since initial recognition, a loss allowance is required for credit losses expected over the remaining life of the exposure, irrespective of the timing of the default (a lifetime ECL).

For trade receivables and contract assets, the Group applies a simplified approach in calculating ECLs. Therefore, the Group does not track changes in credit risk, but instead recognizes a loss allowance based on lifetime ECLs at each reporting date. The Group has established a provision matrix that is based on its historical credit loss experience, adjusted for forward-looking factors regional specific to the debtors and the economic environment.

For debt instruments at FVOCI, the Group applies the low credit risk simplification. At every reporting date, the Group evaluates whether the debt instrument is considered to have low credit risk using all reasonable and supportable information that is available without undue cost or effort. In making that evaluation, the Group reassesses the internal credit rating of the debt instrument. In addition, the Group considers that there has been a significant increase in credit risk when contractual payments are more than 30 days past due.
The Group considers a financial asset in default when contractual payments are 180 days past due. However, in certain cases, the Group may also consider a financial asset to be in default when internal or external

information indicates that the Group is unlikely to receive the outstanding contractual amounts in full before taking into account any credit enhancements held by the Group. A financial asset is written off when there is no reasonable expectation of recovering the contractual cash flows.

Financial liabilities

1) Initial recognition and measurement

Financial liabilities are classified, at initial recognition, as financial liabilities at FVtPL, loans and borrowings, payables, or as derivatives designated as hedging instruments in an effective hedge, as appropriate.

All financial liabilities are recognized initially at fair value and, in the case of loans and borrowings and payables, net of directly attributable transaction costs.

The Group's financial liabilities include mainly trade and other payables, interest-bearing loans and borrowings as well as derivative liabilities.

2) Subsequent measurement

The measurement of financial liabilities depends on their classification, as described below:

3) Financial liabilities at FVtPL

Financial liabilities at FVtPL include financial liabilities held for trading and financial liabilities designated upon initial recognition as at FVtPL.

Financial liabilities are classified as held for trading if they are incurred for the purpose of repurchasing in the near term. This category also includes derivative financial instruments entered into by the Group that are not designated as hedging instruments in hedge relationships as defined by KIFRS 1109. Separated embedded derivatives are also classified as held for trading unless they are designated as effective hedging instruments.

Gains or losses on liabilities held for trading are recognized in the statement of profit or loss.

Financial liabilities designated upon initial recognition at FVtPL are designated at the initial date of recognition, and only if the criteria in KIFRS 1109 are satisfied.

4) Loans and borrowings

This is the category most relevant to the Group. After initial recognition, interest-bearing loans and borrowings are subsequently measured at amortized cost using the EIR method. Gains and losses are recognized in profit or loss when the liabilities are derecognized as well as through the EIR amortization process.

Amortized cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the EIR. The EIR amortization is included as finance costs in the statement of profit or loss.

This category generally applies to interest-bearing loans and borrowings. For more information, refer to note 19.

5) Derecognition

A financial liability is derecognized when the obligation under the liability is discharged, cancelled or expires. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as the derecognition of the original liability and the recognition of a new liability. The difference in the respective carrying amounts is recognized in the statement of profit or loss.

Offsetting of financial instruments

Financial assets and financial liabilities are offset, and the net amount is reported in the consolidated statement of financial position if there is a currently enforceable legal right to offset the recognized amounts and there is an intention to settle on a net basis, to realize the assets and settle the liabilities simultaneously.

Derivative financial instruments and hedge accounting

1) Initial recognition and subsequent measurement

The Group uses derivative financial instruments, such as forward exchange contracts and interest rate swaps, to hedge its foreign currency risks, interest rate risks and commodity price risks. Such derivative financial instruments are initially recognized at fair value on the date on which a derivative contract is entered into and are subsequently re-measured at fair value. Derivatives are carried as financial assets when the fair value is positive and as financial liabilities when the fair value is negative.

For the purpose of hedge accounting, hedges are classified as:

- fair value hedges when hedging the exposure to changes in the fair value of a recognized asset or liability or an unrecognized firm commitment.
- cash flow hedges when hedging the exposure to variability in cash flows that is either attributable to a particular risk associated with a recognized asset or liability, or a highly probable forecast transaction or the foreign currency risk in an unrecognized firm commitment.
- hedges of a net investment in a foreign operation.

At the inception of a hedge relationship, the Group formally designates and documents the hedge relationship to which it wishes to apply hedge accounting and the risk management objective and strategy for undertaking the hedge.

The documentation includes identification of the hedging instrument, the hedged item, the nature of the risk being hedged and how the Group will assess whether the hedging relationship meets the hedge effectiveness requirements (including analysis of the sources of hedge ineffectiveness and how the hedge ratio is determined). A hedging relationship qualifies for hedge accounting if it meets all of the following effectiveness requirements:

- there is an economic relationship, between the hedged item and the hedging instrument.
- the effect of credit risk does not dominate the value changes, that result from that economic relationship.
- the hedge ratio of the hedging relationship is the same as that resulting from the quantity of the hedged item that the Group actually hedges and the quantity of the hedging instrument that the Group actually uses to hedge that quantity of hedged item.

Hedges that meet all the qualifying criteria for hedge accounting are accounted for, as described below:

2) Fair value hedges

The change in the fair value of a hedging instrument is recognized in the statement of profit or loss as other expense. The change in the fair value of the hedged item attributable to the risk hedged is recorded as part of the carrying value of the hedged item and is also recognized in the statement of profit or loss as other expenses. For fair value hedges relating to items carried at amortized cost, any adjustment to carrying value is amortized through profit or loss over the remaining term of the hedge using the EIR method. The EIR amortization may begin as soon as an adjustment exists and no later than when the hedged item ceases to be adjusted for changes in its fair value attributable to the risk being hedged.

If the hedged item is derecognized, the unamortized fair value is recognized immediately in profit or loss.

When an unrecognized firm commitment is designated as a hedged item, the subsequent cumulative change in the fair value of the firm commitment attributable to the hedged risk is recognized as an asset or liability with a corresponding gain or loss recognized in profit or loss. The Group has forward exchange contracts as well as currency and interest rate swaps (CRS) in order to hedge the risk of foreign exchange rate fluctuation of assets and liabilities denominated in foreign currencies and floating interest rates on corporate bonds. The Group applies fair value hedge accounting for forward exchange contracts (note 25.1.1) and currency and interest rate swaps (note 25.1.2).

3) Cash flow hedges

The effective portion of the gain or loss on the hedging instrument is recognized in OCI in the cash flow hedge reserve, while any ineffective portion is recognized immediately in the statement of profit or loss. The cash flow hedge reserve is adjusted to the lower of the cumulative gain or loss on the hedging instrument and the cumulative change in fair value of the hedged item.

The amounts accumulated in OCI are accounted for, depending on the nature of the underlying hedged transaction. If the hedged transaction subsequently results in the recognition of a non-financial item, the amount accumulated in equity is removed from the separate component of equity and included in the initial cost or other carrying amount of the hedged asset or liability. This is not a reclassification adjustment and will not be recognized in OCI for the period. This also applies where the hedged forecast transaction of a non-financial asset or non-financial liability subsequently becomes a firm commitment for which fair value hedge accounting is applied.

For any other cash flow hedges, the amount accumulated in OCI is reclassified to profit or loss as a reclassification adjustment in the same period or periods during which the hedged cash flows affect profit or loss.

If cash flow hedge accounting is discontinued, the amount that has been accumulated in OCI must remain in accumulated OCI if the hedged future cash flows are still expected to occur. Otherwise, the amount will be immediately reclassified to profit or loss as a reclassification adjustment. After discontinuation, once the hedged cash flow occurs, any amount remaining in accumulated OCI must be accounted for depending on the nature of the underlying transaction as described above.

The Group had interest rate swap agreements about some borrowings which had been terminated early. The Group applied cash flow hedge accounting for interest rate swap contracts (note 25.1.3).

4) Hedges of a net investment

Hedges of a net investment in a foreign operation, including a hedge of a monetary item that is accounted for as part of the net investment, are accounted for in a way similar to cash flow hedges. Gains or losses on the hedging instrument relating to the effective portion of the hedge are recognized as OCI while any gains or losses relating to the ineffective portion are recognized in the statement of profit or loss. On disposal of the foreign operation, the cumulative value of any such gains or losses recorded in equity is transferred to the statement of profit or loss.

Fair value measurement

The Group measures financial instruments such as derivatives at fair value at each balance sheet date.

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value measurement is based on the presumption that the transaction to sell the asset or transfer the liability takes place either:

- in the principal market for the asset or liability, or
- in the absence of a principal market, in the most advantageous market for the asset or liability.

The principal or the most advantageous market must be accessible by the Group.

The fair value of an asset or a liability is measured using the assumptions that market participants would use when pricing the asset or liability, assuming that market participants act in their economic best interest.

A fair value measurement of a non-financial asset takes into account a market participant's ability to generate economic benefits by using the asset in its highest and best use or by selling it to another market participant that would use the asset in its highest and best use.

The Group uses valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, maximizing the use of relevant observable inputs and minimizing the use of unobservable inputs.

All assets and liabilities for which fair value is measured or disclosed in the financial statements are categorized within the fair value hierarchy, described as follows, based on the lowest level input that is significant to the fair value measurement as a whole:

- **Level 1** — Quoted (unadjusted) market prices in active markets for identical assets or liabilities.
- **Level 2** — Valuation techniques for which the lowest level input that is significant to the fair value measurement is directly or indirectly observable.
- **Level 3** — Valuation techniques for which the lowest level input that is significant to the fair value measurement is unobservable.

For assets and liabilities that are recognized in the financial statements at fair value on a recurring basis, the Group determines whether transfers have occurred between levels in the hierarchy by re-assessing categorization (based on the lowest level input that is significant to the fair value measurement as a whole) at the end of each reporting period.

The Group determines the policies and procedures for both recurring fair value measurement, such as investment properties and unquoted AFS financial assets, and for non-recurring measurement, such as assets held for sale in discontinued operation.

External valuers are involved for valuation of significant assets, such as AFS financial assets, and significant liabilities. Selection criteria include market knowledge, reputation, independence and whether professional standards are maintained.

At each reporting date, the Group analyses the movements in the values of assets and liabilities which are required to be remeasured or re-assessed as per the Group's accounting policies. For this analysis, the Group verifies the major inputs applied in the latest valuation by agreeing the information in the valuation computation to contracts and other relevant documents.

The Group, in conjunction with the Group's external valuers, also compares the change in the fair value of each asset and liability with relevant external sources to determine whether the change is reasonable.

On an interim basis, the Group and the Group's external valuers present the valuation results to the Group's independent auditors. This includes a discussion of the major assumptions used in the valuations.
For the purpose of fair value disclosures, the Group has determined classes of assets and liabilities on the basis of the nature, characteristics and risks of the asset or liability and the level of the fair value hierarchy, as explained above.

2.20 GOVERNMENT GRANTS

Government grants are recognized where there is reasonable assurance that the grant will be received and all attached conditions will be complied with. When the grant relates to an expense item, it is recognized as income on a systematic basis over the periods that the related costs, for which it is intended to compensate, are expensed. When the grant relates to an asset, it is recognized as income in equal amounts over the expected useful life of the related asset.

When the Group receives grants of non-monetary assets, the asset and the grant are recorded at nominal amounts and released to profit or loss over the expected useful life of the asset, based on the pattern of consumption of the benefits of the underlying asset by equal annual installments.

2.21 RESTATEMENT OF PRIOR YEAR FIGURES IN CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

In the 2nd quarter of 2022, the Group performed a reclassification of 3rd party freight costs related to direct shipments for IC sales in Songwon Industrial Co., Ltd., from selling and administration costs (SG&A) to cost of sales (COS). As a result of this reclassification, the results for the financial year ended December 31, 2021 (comparable period), have been restated. For the financial year ended December 31, 2021, COS increased by 22,835 Million KRW, SG&A decreased by -22,835 Million KRW.

This caused a decrease in gross profit of -2.3%-points when compared to the previously reported year ended December 31, 2021. The changes in disclosure have no impact on the operating profit and net profit for the period.

2.22 NEW AND AMENDED STANDARDS AND INTERPRETATIONS

The Group applied certain standards and amendments for the first-time, which are effective for annual periods beginning on or after January 1, 2022 (unless otherwise stated). The Group has not adopted early any other standard, interpretation or amendment that has been issued but is not yet effective.

Amendments to KIFRS 1103: Reference to the Conceptual Framework

The amendments replace a reference to a previous version of the KASB's Conceptual Framework with a reference to the current version issued in March 2018 without significantly changing its requirements.

The amendments add an exception to the recognition principle of KIFRS 1103 *Business Combinations* to avoid the issue of potential day 2, gains or losses arising for liabilities and contingent liabilities that would be within the scope of KIFRS 1037 *Provisions, Contingent Liabilities and Contingent Assets* or KIFRS 2121 *Levies*, if incurred separately.

The exception requires entities to apply the criteria in KIFRS 1037 or KIFRS 2121, respectively, instead of the Conceptual Framework, to determine whether a present obligation exists at the acquisition date.

The amendments also add a new paragraph to KIFRS 1103 to clarify that contingent assets do not qualify for recognition at the acquisition date.

These amendments had no impact on the consolidated financial statements of the Group as there were no contingent assets, liabilities and contingent liabilities within the scope of these amendments arisen during the period.

Amendments to KIFRS 1016: Property, Plant and Equipment: Proceeds before Intended Use

The amendment prohibits entities from deducting from the cost of an item of property, plant and equipment, any proceeds of the sale of items produced while bringing that asset to the location and condition necessary for it to be capable of operating in the manner intended by management. Instead, an entity recognizes the proceeds from selling such items, and the costs of producing those items, in profit or loss.

These amendments had no impact on the consolidated financial statements of the Group as there were no sales of such items produced by property, plant and equipment made available for use on or after the beginning of the earliest period presented.

Amendments to KIFRS 1101 First-time Adoption of International Financial Reporting Standards: Subsidiary as a First-Time Adopter

The amendment permits a subsidiary that elects to apply paragraph D16(1) of KIFRS 1101 to measure cumulative translation differences using the amounts reported in the parent's consolidated financial statements, based on the parent's date of transition to KIFRS, if no adjustments were made for consolidation procedures and for the effects of the business combination in which the parent acquired the subsidiary. This amendment is also applied to an associate or joint venture that elects to apply paragraph D16(1) of KIFRS 1101.

These amendments had no impact on the consolidated financial statements of the Group as it is not a first-time adopter.

Amendments to KIFRS 1109 Financial Instruments: Fees in the 10 percent Test for Derecognition of Financial Liabilities

The amendment clarifies the fees that an entity includes when assessing whether the terms of a new or modified financial liability are substantially different from the terms of the original financial liability. These fees include only those paid or received between the borrower and the lender, including fees paid or received by either the borrower or lender on the other's behalf. There is no similar amendment proposed for KIFRS 1039 *Financial Instruments: Recognition and Measurement.*

These amendments had no impact on the consolidated financial statements of the Group as there were no modifications of the Group's financial instruments during the period.

Amendments to KIFRS 1037: Onerous Contracts – Costs of Fulfilling a Contract

An onerous contract is a contract under which the unavoidable costs (i.e., the costs that the Group cannot avoid because it has the contract) of meeting the obligations under the contract exceed the economic benefits expected to be received under it.

The amendments specify that when assessing whether a contract is onerous or loss-making, an entity needs to include costs that relate directly to a contract to provide goods or services include both incremental costs (e.g., the costs of direct labor and materials) and an allocation of costs directly related to contract activities (e.g., depreciation of equipment used to fulfil the contract as well as costs of contract management and supervision). General and administrative costs do not relate directly to a contract and are excluded unless they are explicitly chargeable to the counterparty under the contract.

The Group has applied these amendments to contracts for which it has not yet fulfilled all its obligations at the beginning of the annual reporting period in which it first applies the amendments.

3. SIGNIFICANT ACCOUNTING JUDGMENTS, ESTIMATES AND ASSUMPTIONS

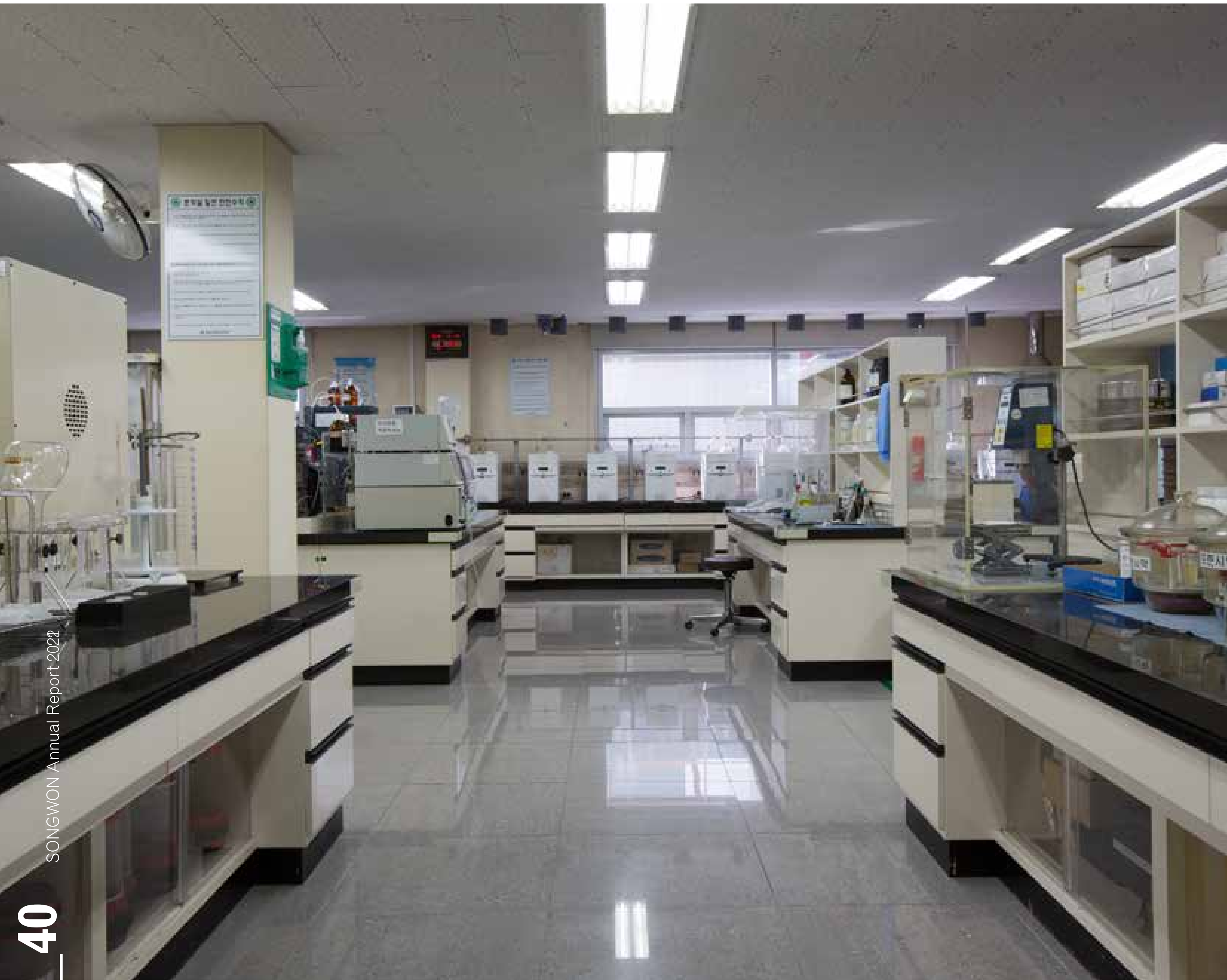
The preparation of the Group's financial statements requires management to make judgments, estimates and assumptions that affect the reported amounts of revenues, expenses, assets and liabilities, and the disclosure of contingent liabilities, at the end of the reporting period. However, uncertainty about these assumptions and estimates could result in outcomes that require a material adjustment to the carrying amount of the asset or liability affected in future periods. The key assumptions concerning the future and other key sources of estimation uncertainty at the reporting date, which have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year, are described below.

Notes	Description	Nature of estimation
7, 8, 9, 10, 11	**Impairment of non-financial assets / goodwill**	Impairment exists when the carrying value of an asset or cash-generating unit exceeds its recoverable amount, which is the higher of its fair value less costs to sell and its value in use. The determination of the recoverable amount of a cash-generating unit involves the use of estimates by management. The fair value less costs to sell calculation is based on available data from binding sales transactions in an arm's length transaction of similar assets or observable market prices less incremental costs for disposing of the asset. The value in use calculation is based on a discounted cash flow model. The cash flows are derived from the expectations for the next three to five years and do not include restructuring activities that the Group is not yet committed to or significant future investments that will enhance the asset's performance of the cash-generating unit being tested. The recoverable amount based on the value in use is most sensitive to the discount rate used for the discounted cash flow model (WACC), as well as the expected future cash-inflows and the growth rate used for extrapolation purposes. The recoverable amount based on the fair value less cost to sell is most sensitive to the market prices, premiums and the estimate of cost to sell. These estimates, including the methodologies used, can have a material impact on the fair value and ultimately, the amount of any goodwill impairment.
21, 22	**Pension and other employment benefits**	The cost of defined benefit pension plans and other similar long-term employee benefits, and the present value of the pension obligation are determined using actuarial valuations. An actuarial valuation involves making various assumptions, which may differ from actual developments in the future. These include the determination of the discount rate, future salary increases, mortality rates and future pension increases. Due to the complexity of the valuation, the underlying assumptions and its long-term nature, a defined benefit obligation is highly sensitive to changes in these assumptions.
29.1, 29.2	**Income tax / deferred tax assets**	The Group applies significant judgement in identifying uncertainties over income tax treatments. Since the Group operates in a complex multinational environment, it assesses on a yearly base whether these uncertainties have an impact on its consolidated financial statements. Deferred tax assets are recognized for all unused tax losses, to the extent that it is probable that taxable profit will be available against which the losses can be utilized. Significant management judgment is required to determine the amount of deferred tax assets that can be recognized, based upon the likely timing and the level of future taxable profits together with future tax planning strategies.
25.2	**Fair value of financial instruments**	Where the fair value of financial assets and financial liabilities recorded in the statement of financial position cannot be derived from active markets, their fair value is determined using valuation techniques including the discounted cash flow model. The inputs to these models are taken from observable markets where possible, but where this is not feasible, a degree of judgment is required in establishing fair values. The judgments include consideration of inputs, such as liquidity risk, credit risk and volatility. Changes in assumptions about these factors could affect the reported fair value of financial instruments.

25.3.3 **Leases – determination of lease term and incremental borrowing rate**

The Group determines the lease term as the non-cancellable term of the lease, together with any periods covered by an option to extend the lease if it is reasonably certain to be exercised, or any periods covered by an option to terminate the lease, if it is reasonably certain not to be exercised. The Group applies judgement in evaluating whether it is reasonably certain whether or not to exercise the option to renew or terminate the lease. That is, it considers all relevant factors that create an economic incentive for it to exercise either the renewal or termination. After the commencement date, the Group reassesses the lease term if there is a significant event or change in circumstances that is within its control and affects its ability to exercise or not to exercise the option to renew or to terminate (e.g., construction of significant leasehold improvements or significant customization to the leased asset).

The Group cannot readily determine the interest rate implicit in the lease, therefore, it uses its incremental borrowing rate (IBR) to measure lease liabilities. The IBR is the rate of interest that the Group would have to pay to borrow over a similar term, and with a similar security, the funds necessary to obtain an asset of a similar value to the right-of-use asset in a similar economic environment.



4. STANDARDS ISSUED BUT NOT YET EFFECTIVE

The new and amended standards and interpretations that are issued, but not yet effective, up to the date of issuance of the Group's consolidated financial statements are disclosed below. The Group intends to adopt these new and amended standards and interpretations, if applicable, when they become effective.

Amendments to KIFRS 1117: Insurance Contracts

In 2021, the IASB issued KIFRS 1117 Insurance Contracts (KIFRS 1117), a comprehensive new accounting standard for insurance contracts covering recognition and measurement, presentation and disclosure. Once effective, KIFRS 1117 will replace KIFRS 1104 Insurance Contracts (KIFRS 1104) that was issued in 2007. KIFRS 1117 applies to all types of insurance contracts (i.e., life, non-life, direct insurance and re-insurance), regardless of the type of entities that issue them, as well as to certain guarantees and financial instruments with discretionary participation features.

A few scope exceptions will apply. The overall objective of KIFRS 1117 is to provide an accounting model for insurance contracts that is more useful and consistent for insurers. In contrast to the requirements in KIFRS 1104, which are largely based on grandfathering previous local accounting policies, KIFRS 1117 provides a comprehensive model for insurance contracts, covering all relevant accounting aspects. The core of KIFRS 1117 is the general model, supplemented by:

- A specific adaptation for contracts with direct participation features (the variable fee approach)
- A simplified approach (the premium allocation approach) mainly for short-duration contracts

KIFRS 1117 is effective for reporting periods beginning on or after January 1, 2023, with comparative figures required. Early application is permitted, provided the entity also applies KIFRS 1109 and KIFRS 1115 on or before the date it first applies KIFRS 1117. The amendments are not expected to have a material impact on the Group's financial statements.

Amendments to KIFRS 1001: Classification of Liabilities as Current or Non-current

In January 2020, the IASB issued amendments to paragraphs 69 to 76 of KIFRS 1001 specify the requirements for classifying liabilities as current or non-current. The amendments clarify:

- What is meant by a right to defer settlement
- That a right to defer must exist at the end of the reporting period
- That classification is unaffected by the likelihood that an entity will exercise its deferral right
- That only if an embedded derivative in a convertible liability is itself an equity instrument would the terms of a liability not impact its classification

The amendments are effective for annual reporting periods beginning on or after January 1, 2023 and must be applied retrospectively. The amendments are not expected to have a material impact on the Group's financial statements.

Amendments to KIFRS 1008: Definition of Accounting Estimates

In February 2021, the IASB issued amendments to KIFRS 1008, in which it introduces a definition of accounting estimates. The amendments clarify the distinction between changes in accounting estimates and changes in accounting policies and the correction of errors. Also, they clarify how entities use measurement techniques and inputs to develop accounting estimates.

The amendments are effective for annual reporting periods beginning on or after January 1, 2023 and apply to changes in accounting policies and changes in accounting estimates that occur on or after the start of that period. Earlier application is permitted as long as this fact is disclosed.

The amendments are not expected to have a material impact on the Group's financial statements.

Amendments to KIFRS 1001: Disclosure of Accounting Policies

In February 2021, the IASB issued amendments to KIFRS 1001, in which it provides guidance and examples to help entities apply materiality judgements to accounting policy disclosures. The amendments aim to help entities provide accounting policy disclosures that are more useful by replacing the requirement for entities to disclose their significant accounting policies with a requirement to disclose their material accounting policies and adding guidance on how entities apply the concept of materiality in making decisions about accounting policy disclosures.

The amendments to KIFRS 1001 are applicable for annual periods beginning on or after January 1, 2023 with earlier application permitted.

The Group is currently revising their accounting policy information disclosures to ensure consistency with the amended requirements.

Amendments to KIFRS 1012: Deferred Tax related to Assets and Liabilities Arising from a Single Transaction

In May 2021, the Board issued amendments to KIFRS 1012, which narrow the scope of the initial recognition exception under KIFRS 1012, so that it no longer applies to transactions that give rise to equal taxable and deductible temporary differences.

The amendments should be applied to transactions that occur on or after the beginning of the earliest comparative period presented. In addition, at the beginning of the earliest comparative period presented, a deferred tax asset (provided that sufficient taxable profit is available) and a deferred tax liability should also be recognized for all deductible and taxable temporary differences associated with leases and decommissioning obligations.

The Group is currently assessing the impact of the amendments.

5. SALE OF A SUBSIDIARY

For the financial year ended December 31, 2022, there was no sale of a subsidiary.

The Group sold its 72% interest in Qingdao Long Fortune Songwon Chemical Co. Ltd. with the effective date April 30, 2021. The financial information for the period to the date of disposal is set out below.

5.1 FINANCIAL PERFORMANCE AND CASH FLOW INFORMATION

The financial performance and cash flow information of Qingdao Long Fortune Songwon Chemical Co. Ltd. presented in the tables below are for the four months ended April 30, 2021.

Description	2021 YTD April 30 Million KRW
Sales	13,482
Cost of sales	-11,691
Gross profit	1,791
Selling and administration costs	-1,082
Operating profit	709
Other income	194
Other expenses	-992
Finance income	77
Finance expenses	-42
(Loss) / profit before tax	-54
Income tax expenses	-125
(Loss) / profit after tax	-179

	2021 YTD April 30 Million KRW
Net cash flow from operating activities	-2,066
Net cash flow from investing activities	49
Net cash flow from financing activities	-138
Net (decrease) / increase in cash generated by the subsidiary	-2,155

The net of cash disposed from the sale of 72% interest in Qingdao Long fortune Songwon Chemical Co. Ltd. with effective date April 30, 2021, is as follows:

	2021 YTD April 30 Million KRW
Cash and cash equivalents of subsidiary	-1,524
Total consideration received from sale of subsidiary	7,108
Disposal of a subsidiary, net of cash disposed	5,584

5.2 DETAILS ON SALE OF SUBSIDIARY

The net impairment losses resulting from the sale of 72% interest in Qingdao Long fortune Songwon Chemical Co. Ltd. (SWDM-CN) of 2,378 Million KRW have been recognized as "Other expenses" within the consolidated statements of comprehensive income for the year ended December 31, 2021:

	2021
	Million KRW
Impairment losses from revaluation of SWDM-CN as of March 31, 2021	-3,331
Reversal of 28% impairment losses allocated to non-controlling interests	953
Net impairment losses from sale of 72% interest in SWDM-CN	-2,378

The total consideration received from the sale of 72% interest in Qingdao Long fortune Songwon Chemical Co. Ltd. was derived as follows:

	2021
	As of April 30
Description	Million KRW
Property, plant and equipment	70
Right-of-use assets	588
Inventories	928
Trade and other receivables	8,512
Cash and cash equivalents	1,524
Other non-current and current assets	201
Total assets	*11,823*
Non-current lease liabilities	-734
Trade and other payables	-907
Other non-current and current liabilities	-476
Total liabilities	*-2,117*
Net assets of subsidiary	9,706
Non-controlling interests of 28%	*-2,598*
Total consideration received from sale of 72% interest	7,108

6. SEGMENT INFORMATION

The Group is organized into two main reporting segments "Industrial Chemicals" and "Performance Chemicals". The segments are defined based on SONGWON's product portfolio and its respective product families.

- **Industrial Chemicals**
  Industrial Chemicals operating segment mainly includes the product lines "Polymer Stabilizers", "Fuel and Lubricant Additives" and "Coatings".

- **Performance Chemicals**
  Performance Chemicals operating segment mainly includes the product lines "Thermoplastic Polyurethanes / Solution Polyurethanes", "Tin Intermediates / PVC Stabilizers and Plasticizers" and "Specialty Chemicals".

The Chief Operating Decision Makers (CODM), at Songwon, leaders of respective divisions, monitor the sales and operating profits or losses of its operating segments separately for the purpose of making decisions about resource allocation and performance assessment. However, certain income and expense positions such as other income / expenses, finance income / expenses and income tax expenses are managed on a Group basis and therefore not allocated to operating segments. The Group does not disclose a measure of total assets and liabilities for each reportable segment as such amounts are not reported to the CODM.

There are no inter-company transactions between the two operating segments.

6.1. REPORTED KEY FIGURES

The following key figures are presented each month to the CODM. For the segment reporting, the same accounting policies and methods of computation as were followed in the most recent annual financial statement are used.

	2022	2021	**2022**	2021	**2022**	2021
	Industrial Chemicals		**Performance Chemicals**		**Total**	
Description	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW
Sales	983,239	735,654	346,270	262,536	1,329,509	998,190
Operating profit	179,470	95,621	5,646	10,093	185,116	105,714

6.2. GEOGRAPHIC INFORMATION

6.2.1. SALES

The sales information below is based on the location of the customer. Korea is disclosed separately due to the size of the Korean market whereas all other countries have been summarized into regions. Therefore, no other country's revenues are disclosed separately.

	2022	2021
	Million KRW	Million KRW
Korea	240,554	212,843
Rest of Asia	363,393	281,754
Europe	302,286	230,546
North and South America	334,558	211,418
Australia	4,817	4,503
Middle East and Africa	83,901	57,126
Total sales	1,329,509	998,190

The Group has no customer who accounts for more than 10% of the Group's total sales during the reporting periods.

6.2.2. NON-CURRENT ASSETS

Non-current assets information presented below consists of property, plant and equipment, right-of-use assets, investment properties and intangible assets.

	2022	2021
	Million KRW	Million KRW
Korea	411,991	389,764
Rest of Asia	24,036	27,268
Europe	7,619	8,164
North and South America	10,388	10,851
Middle East and Africa	19,359	19,272
Total	473,393	455,319

7. PROPERTY, PLANT AND EQUIPMENT

Acquisition cost	Land Million KRW	Buildings Million KRW	Structures Million KRW	Machinery Million KRW	Other Million KRW	Construction in progress Million KRW	Total Million KRW
As of January 1, 2021	149,550	91,280	65,989	489,289	46,278	10,640	853,026
Additions	–	1	339	1,883	297	25,801	28,321
Disposals	-44	-158	-1,186	-9,172	-2,046	–	-12,606
Reclassifications	150	474	6,714	13,752	228	-21,318	–
Disposal of subsidiary*	–	–	–	-464	-75	-48	-587
Net exchange differences	–	1,780	–	2,518	344	52	4,694
As of December 31, 2021	149,656	93,377	71,856	497,806	45,026	15,127	872,848
As of January 1, 2022	149,656	93,377	71,856	497,806	45,026	15,127	872,848
Additions	–	144	431	1,802	830	45,352	48,559
Disposals	–	-51	-421	-4,641	-745	–	-5,858
Reclassifications	–	9,293	1,052	37,692	-23,112	-24,925	–
Net exchange differences	–	575	–	-192	54	-56	381
As of December 31, 2022	149,656	103,338	72,918	532,467	22,053	35,498	915,930
Accumulated depreciation and impairment							
As of January 1, 2021	–	-27,904	-42,663	-318,670	-37,577	–	-426,814
Depreciation charge	–	-2,548	-3,047	-22,510	-2,249	–	-30,354
Disposals	–	60	1,034	7,287	1,999	–	10,380
Impairment	–	–	–	-931	-62	-49	-1,042
Disposal of subsidiary*	–	–	–	395	74	48	517
Net exchange differences	–	-283	–	-749	-205	1	-1,236
As of December 31, 2021	–	-30,675	-44,676	-335,178	-38,020	–	-448,547
As of January 1, 2022	–	-30,675	-44,676	-335,178	-38,020	–	-448,547
Depreciation charge	–	-2,761	-3,253	-21,516	-1,681	–	-29,211
Disposals	–	14	308	3,337	689	–	4,348
Impairment	–	-27	–	-891	–	–	-918
Reclassification	–	-1,535	-26	-20,100	21,661	–	-
Net exchange differences	–	-113	–	164	-112	–	-61
As of December 31, 2022	–	-35,096	-47,647	-374,184	-17,462	–	-474,389
Net book value							
As of December 31, 2022	149,656	68,242	25,271	158,283	4,591	35,498	441,541
As of December 31, 2021	149,656	62,703	27,180	162,628	7,007	15,127	424,301

*Refer to note 5 for further details

During the year ending 2022, there were impairment losses of property, plant and equipment within Songwon Specialty Chemicals-India Pvt. Ltd of 918 Million KRW due to scrapping of pilot plant.

During the year ending 2021, there were impairment losses of property, plant and equipment within Qingdao Long Fortune Songwon Chemical Co., Ltd., occurred during the ordinary course of business (828 Million KRW, not related to the COVID-19 pandemic) and impairment losses related to the sale of 72% interest in Qingdao Long Fortune Songwon Chemical Co., Ltd. of 175 Million KRW totaling 1,003 Million KRW. Additional impairment losses of 39 Million KRW have been recognized within Songwon International-Americas Inc., occurred during the ordinary course of business and not related to the COVID-19 pandemic.

Non-cash acquisition of property, plant and equipment during the year ending 2022 amounted to 3,486 Million KRW (2021: 4,025 Million KRW) and accounts payables relating to non-cash transactions amounted to 12,590 Million KRW as at year ending 2022 (2021: 9,104 Million KRW).

Capitalized borrowing costs

Borrowing costs, which are directly attributable to the acquisition or production of a qualified asset, are capitalized as part of the cost of that asset. As at year end 2022, borrowing costs of 267 Million KRW have been capitalized (2021: 94 Million KRW).

Contractual commitments and pledged assets

A pledged asset is an asset that is transferred to a lender for the purpose of securing debt. The lender of the debt maintains possession of the pledged asset but does not have ownership unless a default occurs (refer to note 27). For contractual commitments to purchase property, plant and equipment refer to note 26.3.

8. RIGHT-OF-USE ASSETS AND LEASES

Set out below are the carrying amounts of right-of-use assets recognized and the movements during the period:

	Buildings	Structures	Machinery	Other	Total
Acquisition cost	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW
As of January 1, 2021	21,174	1,525	1,103	1,014	24,816
Additions	982	–	–	133	1,115
Disposals	-262	–	–	-184	-446
Modification of contract	-193	653	47	67	574
Disposal of subsidiary*	-2,293	–	–	–	-2,293
Net exchange differences	1,296	–	85	47	1,428
As of December 31, 2021	20,704	2,178	1,235	1,077	25,194
As of January 1, 2022	20,704	2,178	1,235	1,077	25,194
Additions	84	80	–	110	274
Disposals	–	–	–	-126	-126
Modification of contract	5	578	–	213	796
Net exchange differences	859	1	-35	23	848
As of December 31, 2022	21,652	2,837	1,200	1,297	26,986
Accumulated depreciation					
As of January 1, 2021	-3,216	-1,152	-195	-496	-5,059
Depreciation charge	-1,620	-578	-148	-330	-2,676
Disposals	262	–	–	184	446
Impairment	-1,454	–	–	–	-1,454
Disposal of subsidiary*	1,705	–	–	–	1,705
Net exchange differences	-207	-1	-21	-26	-255
As of December 31, 2021	-4,530	-1,731	-364	-668	-7,293
As of January 1, 2022	-4,530	-1,731	-364	-668	-7,293
Depreciation charge	-1,644	-610	-155	-305	-2,714
Disposals	–	–	–	126	126
Modification of contract	–	–	–	20	20
Net exchange differences	-141	-1	9	-23	-156
As of December 31, 2022	-6,315	-2,342	-510	-850	-10,017
Net book value					
As of December 31, 2022	15,337	495	690	447	16,969
As of December 31, 2021	16,174	447	871	409	17,901

*Refer to note 5 for further details

No impairment losses were recognized in 2022 on right-of-use assets.

In 2021, impairment losses of 1,454 Million KRW were recognized in relation to the sale of 72% interest in Qingdao Long Fortune Songwon Chemical Co., Ltd.

Further, the Group recognized rent expenses from short-term leases of 229 Million KRW (2021: 134 Million KRW), leases of low-value assets of 81 Million KRW (2021: 82 Million KRW) and variable lease payments of 41 Million KRW (2021: 452 Million KRW) in the consolidated statements of comprehensive income.

Set out below are the carrying amounts of lease liabilities and the movements during the year:

Description	**2022** Million KRW	2021 Million KRW
As of January 1	17,934	18,572
Additions	274	1,115
Modifications	816	574
Net exchange differences	689	499
Accretion of interest	604	635
Payments	-3,419	-3,461
As of December 31	16,898	17,934

The maturity analysis of lease liabilities is disclosed in note 25.3.3.

9. INVESTMENT PROPERTIES

Acquisition cost	Land Million KRW	Buildings Million KRW	Total Million KRW
As of January 1, 2021	3,280	507	3,787
Net exchange differences	-	-3	-3
As of December 31, 2021	3,280	504	3,784
Net exchange differences	-2	-6	-8
As of December 31, 2022	3,278	498	3,776
Accumulated depreciation			
As of January 1, 2021	–	-304	-304
Depreciation charge	–	-15	-15
Net exchange differences	–	2	2
As of December 31, 2021	–	-317	-317
Depreciation charge	–	-10	-10
Net exchange differences	–	7	7
As of December 31, 2022	–	-320	-320
Net book value			
As of December 31, 2022	3,278	178	3,456
As of December 31, 2021	3,280	187	3,467

Investment properties are stated at cost less any accumulated depreciation and impairment losses, if any. The same useful lives have been applied for property, plant and equipment.

Description	**2022** Million KRW	2021 Million KRW
Rental income	15	17
Operational expenses	-37	-39

The Company owns an office building in Busan which is subleased. The fair value of the office building amounts to 8.607 Million KRW as of December 31, 2022 (2021: 7,950 Million KRW). In addition, Songwon International - Japan K.K. owns an object which is subleased. The fair value of the building and land is 19 Million KRW (2021: 25 Million KRW). The fair value of investment properties is calculated based on the valuation of an independent rating agency taking into consideration the location and category of the investment property being valued. It is classified as Level 3 based on valuation technique of the fair value hierarchy.

During the current year, the Company did not dispose of any investment properties (2021: no disposed investment properties).

Disclosure of pledged assets can be found in note 27.

10. INTANGIBLE ASSETS

	Industrial rights	Software	Memberships	Goodwill	Construction in progress	Total
Acquisition cost	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW
As of January 1, 2021	6,032	2,771	831	41,116	670	51,420
Additions	2	214	–	–	2,054	2,270
Disposals	-1	-4	–	–	–	-5
Reclassifications	610	–	–	–	-610	–
Net exchange differences	–	77	–	2,922	–	2,999
As of December 31, 2021	6,643	3,058	831	44,038	2,114	56,684
As of January 1, 2022	6,643	3,058	831	44,038	2,114	56,684
Additions	344	411	–	–	2,359	3,114
Disposals	-453	-11	–	–	-133	-597
Reclassifications	1,154	–	–	–	-1,154	–
Net exchange differences	–	100	–	-3,304	–	-3,204
As of December 31, 2022	7,688	3,558	831	40,734	3,186	55,997
Accumulated amortization and impairment						
As of January 1, 2021	-3,103	-2,494	–	-38,066	–	-43,663
Amortization charge	-500	-114	–	–	–	-614
Disposals	1	4	–	–	–	5
Net exchange differences	–	-69	–	-2,693	–	-2,762
As of December 31, 2021	-3,602	-2,673	–	-40,759	–	-47,034
As of January 1, 2022	-3,602	-2,673	–	-40,759	–	-47,034
Amortization charge	-632	-168	–	–	–	-800
Disposals	586	11	–	–	–	597
Impairment	-391	-	–	–	–	-391
Net exchange differences	–	-92	–	3,150	–	3,058
As of December 31, 2022	-4,039	-2,922	–	-37,609	–	-44,570
Net book value						
As of December 31, 2022	3,649	636	831	3,125	3,186	11,427
As of December 31, 2021	3,041	385	831	3,279	2,114	9,650

Intangible assets with a definite useful life are amortized over the useful life and assessed for impairment whenever there is an indication that the intangible asset may be impaired. During the year ended 2022, the Group recognized impairment loss on intangible assets on industrial rights of 391 Million KRW (2021: no impairment loss).

The intangible assets with an indefinite useful life are tested for impairment on an annual basis. An impairment test was carried out for goodwill and memberships based on the recoverable amount of each asset. For further details of the impairment test, refer to note 11. The goodwill items consist of items acquired in a business combination. In the financial years 2022 and 2021, no business combination took place that led to a recognition of goodwill.

10.1 DETAILS OF INDIVIDUALLY SIGNIFICANT INTANGIBLE ASSETS

		2022	2021	
		December 31	December 31	
Description	**Remark**	Million KRW	Million KRW	**Remaining life**
Industrial rights	REACH	3,073	2,705	6.4
Industrial rights	1330 Technology	357	475	3.0
Membership	New Seoul Country	778	778	Indefinite
Goodwill	Acquisition of Business SeQuent Scientific Limited	3,125	3,279	Indefinite
Construction-in-progress	D-365	2,781	1,365	n/a
Construction-in-progress	REACH	273	749	n/a
Construction-in-progress	IT LIMS system	132	–	n/a
Significant intangible assets total		10,519	9,351	

11. IMPAIRMENT TESTING OF GOODWILL AND INTANGIBLES WITH INDEFINITE USEFUL LIFE

11.1. IMPAIRMENT TESTING OF GOODWILL AND INTANGIBLE ASSETS WITH INDEFINITE USEFUL LIFE

Goodwill acquired through business combinations and memberships with an indefinite useful life have been allocated to the cash-generating units (CGUs) according to their business activities. Goodwill acquired in a business combination is allocated to each CGU expected to benefit from the synergies of the business combination.

The goodwill resulting from the business acquisition of SeQuent Scientific Limited was allocated to the individual CGU of Songwon Specialty Chemicals – India Pvt. Ltd., India (SWDM-IN).

Details of the allocation of goodwill and intangible assets with an indefinite useful life to the CGU are as follows:

Description	**2022** December 31 Million KRW	2021 December 31 Million KRW
Goodwill of Songwon Specialty Chemicals-India Pvt. Ltd., India (SWDM-IN)	3,125	3,279
Memberships with indefinite useful lives of the rest of the Group (main CGU)	831	831
Total tested goodwill and intangible assets with indefinite useful lives	3,956	4,110

The Group performed its annual impairment test in December 2022 and 2021. The recoverable amount of the CGU – to which goodwill and intangible assets with an indefinite useful life are allocated – has been determined based on its value in use, calculated using the discounted cash flow (DCF) model.

CGU of SWDM-IN

As of December 31, 2022, the recoverable amount of the CGU of Songwon Specialty Chemicals – India Pvt. Ltd., India amounts to 46,919 Million KRW or 3,082 Million INR (2021: 56,939 Million KRW or 3,565 Million INR) and exceeds the carrying amount of the respective CGU.

Memberships with indefinite useful lives of the rest of the Group

As of December 31, 2022, no impairment loss is recognized according to the impairment test on memberships with indefinite useful lives (2021: no impairment loss).

11.2. KEY ASSUMPTIONS USED IN CALCULATION OF VALUE IN USE

The calculation of the CGU value in use reflects the future free cash flows for the next five years for SWDM-IN discounted to the present value at the WACC and an estimated residual value. The projected free cash flows for SWDM-IN's CGU is estimated on the basis of the Budget 2023 and the Business Plan 2023 – 2027, as approved by management, and mid-term assumptions. For the free cash flows extending beyond the detailed planning period, a terminal value was computed by capitalizing the normalized cash flows using a constant growth rate. The long-term growth rate was calculated in consideration of the long-term inflation expectations for relevant countries.

In addition, a market risk premium of 6.00% (2021: 6.50%) and a small cap premium of 3.02% (2021: 3.21%) were applied for the calculation of the WACC.

The key assumptions underlying the calculation are as follows:

Parameters for the determination of the recoverable amount of the CGU	Description
Average annual growth rate	Average annual growth is calculated on the basis of mid-term assumptions.
WACC	WACC, which is the weighted average of cost of equity and cost of debt, is calculated using the Capital Asset Pricing Model (CAPM). The application of pre-tax WACC and post-tax WACC yields the same value in use.
Long-term growth rate	Long-term growth rate is calculated based on the long-term inflation expectations for the relevant countries.

Parameters for the determination of the recoverable CGU amount of SWDM-IN	2022	2021
Average annual growth rate	6.27%	4.88%
Pre-tax WACC	16.05%	15.53%
Post-tax WACC	11.80%	11.57%
Long-term growth rate	2.82%	3.05%

The following changes in key assumptions in 2022 led to a situation where the value in use for the CGU SWDM-IN equals the carrying amount:

Parameters for the determination of the recoverable CGU amount	Sensitivity analysis SWDM-IN
Average annual growth rate	0.00%
Pre-tax WACC	20.02%
Post-tax WACC	14.47%
Long-term growth rate	0.00%

12. INVESTMENT ACCOUNTED FOR USING THE EQUITY METHOD

Changes in the investments in joint ventures are summarized as follows:

	As of January 1	Dividends	Share of result from equity method revaluation	Exchange rate effects	As of December 31
2021	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW
Songwon Baifu Chemicals (Tangshan) Co., Ltd.	5,912	-519	1,103	-30	6,466
Total	5,912	-519	1,103	-30	6,466
2022					
Songwon Baifu Chemicals (Tangshan) Co., Ltd.	6,466	-581	2,020	-87	7,818
Total	6,466	-581	2,020	-87	7,818

13. OTHER FINANCIAL ASSETS

	2022 December 31		2021 December 31	
	Non-current	**Current**	**Non-current**	**Current**
Description	Million KRW	Million KRW	Million KRW	Million KRW
Financial instruments at amortized cost (bank deposit)	529	1,826	349	408
Financial instrument at FVtPL	11,847	2,591	9,530	–
Derivative assets at FVtPL (note 25)	2,293	1,849	505	25
Equity instrument at FVOCI	–	–	102	–
Guarantee and other deposits at amortized cost	1,361	411	1,582	712
Total	16,030	6,677	12,068	1,145

As of December 31, 2022 financial instruments at amortized cost (bank deposit) include restricted cash of 7 Million KRW (2021: 7 Million KRW).

13.1 EQUITY INSTRUMENTS AT FVOCI

Details of equity instruments at FVOCI as of December 31, 2022 and 2021 are as follows:

	2022 December 31				2021 December 31			
	Number of shares	**% to equity**	**Cost**	**Fair value**	**Number of shares**	**% to equity**	**Cost**	**Fair value**
Description			Million KRW	Million KRW			Million KRW	Million KRW
Ulsan Broadcasting Corporation	180,000	3.00%	900	–	180,000	3.00%	900	102
Total			900	–			900	102

Investments in equity instruments that do not have a quoted market price in an active market are measured using an appropriate valuation technique.

14. INVENTORIES

Description	**2022** December 31 Million KRW	2021 December 31 Million KRW
Raw materials and supplies	85,687	83,529
Work in progress	1,250	2,374
Finished and semi-finished goods	232,946	177,085
Goods in transit	54,131	70,978
Consignment stocks	3,115	1,914
Total inventories at the lower of cost and net realizable value	377,129	335,880

As of December 31, 2022, inventory allowance balance amounted to 4,853 Million KRW for raw materials, work in progress, finished and semi-finished goods (2021: 5,129 Million KRW). The Group recognized reversal of inventory allowance of 276 Million KRW in the financial year 2022 (2021: expense of 2,021 Million KRW).

For the year ended 2022, the Group recognized inventory impairment losses of 1,777 Million KRW in course of the annual inventory stocktaking procedures.

For the year ended 2021, impairment losses of 749 Million KRW have been recognized in relation to the sale of 72% interest in Qingdao Long Fortune Songwon Chemical Co., Ltd.

15. TRADE AND OTHER RECEIVABLES

Description	**2022** December 31 Million KRW	2021 December 31 Million KRW
Trade and notes receivables	176,734	179,814
Allowances for trade and notes receivables	-1,371	-1,269
Trade and notes receivables (related parties)	63	–
Other accounts receivables	1,670	1,164
Allowances for other accounts receivables	-18	-26
Accrued income	96	37
Total	177,174	179,720

Other accounts receivables include customs duty refunds, rental income receivables and others.

Changes in the allowance for doubtful accounts for trade and other receivables are as follows:

	Million KRW
January 1, 2021	-1,283
Charge for the period	-353
Utilized	66
Unused amounts reversed	275
December 31, 2021	-1,295
January 1, 2022	-1,295
Charge for the period	-106
Utilized	–
Unused amounts reversed	12
December 31, 2022	-1,389

The ageing analysis of trade and other receivables is as follows:

			Days past due			
	Total	**Current**	**≤ 90**	**91-120**	**121-180**	**> 180**
	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW
December 31, **2022**	178,563	166,012	11,689	51	261	550
December 31, 2021	181,015	169,676	10,773	–	–	566

Refer to note 25.3.2 on credit risk of trade receivables, which describes how the Group manages and measures credit quality of trade receivables that are neither past due, nor impaired.

As the right of recourse is granted to the transferee, the balance of trade receivable that are not derecognized at the end of the financial year amounts to 68,440 Million KRW (2021: 55,531 Million KRW). The total amount of deposits received was carried in the financial statements under interest-bearing loans and borrowings.

16. OTHER CURRENT ASSETS

Other current assets as of December 31, 2022 and 2021, consist of the following:

Description	2022 December 31 Million KRW	2021 December 31 Million KRW
Advance payments	1,030	1,273
Prepaid expenses	4,623	5,322
VAT refundables	7,267	6,989
Total	12,920	13,584

17. CASH AND CASH EQUIVALENTS

Description	2022 December 31 Million KRW	2021 December 31 Million KRW
Cash on hand	59	52
Bank accounts	76,069	89,727
Time deposits (< 3 months)	28,632	7,965
Total	104,760	97,744

Cash at banks earns interest at floating rates based on daily bank deposit rates. Time deposits are made for various periods from one day to three months, depending on the Group's immediate cash requirements, and earn interest at the respective short-term deposit rates.

18. ISSUED CAPITAL AND RESERVES

18.1 SHARE CAPITAL

In accordance with the Articles of Incorporation, the Company is authorized to issue 100,000,000 shares of common stock with a par value of 500 KRW per share. As of December 31, 2022 and 2021, the Company issued 24,000,000 shares of common stocks outstanding with a carrying value of 12,000 Million KRW.

18.2 CAPITAL SURPLUS

As of December 31, 2022 and 2021, the Group's capital surplus is composed of the following:

	2022 December 31	2021 December 31
Description	Million KRW	Million KRW
Paid-in capital in excess of par value	20,065	20,065
Gain on disposal of treasury stock	4,296	4,296
Loss on change in non-controlling interest due to interest acquisition	-3,879	-3,879
Total	20,482	20,482

18.3 RESERVES

	2022 December 31	2021 December 31
Description	Million KRW	Million KRW
Legal reserve	3,288	2,808
Asset revaluation surplus	25,815	25,815
Total	29,103	28,623

Legal reserves

In accordance with the Korean Commercial Code, an amount equal to at least 10% of cash dividends is required to be appropriated as a legal reserve until the reserve equals 50% of paid-in capital. The legal reserve may not be utilized for cash dividends, but may only be used to offset a deficit, if any, or be transferred to capital. Appropriation to the legal reserve from retained earnings, pursuant to the approval of the General Meeting of Shareholders on March 17, 2023 amounted to 480 Million KRW (2021: 288 Million KRW).

Asset revaluation reserve

The Group re-valued certain parts of its property, plant and equipment in accordance with the Korean Asset Revaluation Act on January 1, 1984, and January 1, 1999, resulting in a revaluation surplus of 2,884 Million KRW and 64,277 Million KRW, respectively. An asset revaluation surplus amounting to 62,343 Million KRW, net of related revaluation tax, was credited to capital surplus. As of December 31, 2022 and 2021, the asset revaluation surplus is 25,815 Million KRW. The asset revaluation surplus of 23,312 Million KRW and 13,216 Million KRW were utilized in disposition of accumulated deficit pursuant to the approval of the stockholders on March 6, 2008, and March 7, 2009, respectively. The asset revaluation surplus may not be utilized for cash dividends, but may only be used to offset a deficit, if any, or be transferred to capital.

Dividends

Dividends approved by the shareholders are as follows:

Description	**2022** December 31	2021 December 31
Subject to the year	2021	2020
Dividends on ordinary shares in KRW	4,800,000,000	2,880,000,000
Number of shares	24,000,000	24,000,000
Dividends per share in KRW	200	120

18.4 ACCUMULATED OTHER COMPREHENSIVE INCOME

Accumulated other comprehensive income, net of tax, as of December 31, 2022 and 2021, is composed of the following:

Description	**2022** December 31 Million KRW	2021 December 31 Million KRW
Re-measurement of defined benefit plans	-4,368	-16,935
OCI recognized within retained earnings	-4,368	-16,935
Cash flow hedge reserve	–	-25
Fair value reserve of financial assets at FVOCI	-703	-614
Foreign currency translation reserve	-1,211	-944
OCI recognized within other components of equity	-1,914	-1,583

Details of other comprehensive income for the year ended December 31, 2022 and 2021, are as follows:

Description	**2022** Million KRW	2021 Million KRW
Pre-tax amounts		
Gains / (losses) on valuation of interest rate swaps	33	1,534
(Losses) / gains on valuation of financial assets FVOCI	-103	-326
Exchange differences on translation of foreign operations	-267	6,681
Re-measurement gains / (losses) on defined benefit plans	15,726	11,568
Pre-tax amounts total	15,389	19,457
Tax effects		
Gains / (losses) on valuation of interest rate swaps	-8	-352
(Losses) / gains on valuation of financial assets at FVOCI	14	74
Re-measurement gains / (losses) on defined benefit plans	-3,159	-2,046
Tax effects total	-3,153	-2,324
Net amounts		
Gains / (losses) on valuation of interest rate swaps	25	1,182
(Losses) / gains on valuation of financial assets FVOCI	-89	-252
Exchange differences on translation of foreign operations	-267	6,681
Re-measurement gains / (losses) on defined benefit plans	12,567	9,522
Net amounts total	12,236	17,133

19. BONDS, INTEREST-BEARING LOANS AND BORROWINGS

Interest-bearing loans and borrowings as of December 31, 2022 and 2021, are as follows:

Description	**2022** December 31 Million KRW	2021 December 31 Million KRW
Corporate bonds	56,905	54,832
Long-term borrowings	8,840	5,670
Non-current interest-bearing loans and borrowings	65,745	60,502
Current portion of long-term borrowings	1,930	1,780
Short-term borrowings	206,140	233,531
Current interest-bearing loans and borrowings	208,070	235,311
Total	273,815	295,813

Details of corporate bonds which the Group entered in the form of a private placement bond and floating rate note (FRN) as of December 31, 2022 are as follows:

2022
December 31

Contractual party	Form	Contract amount	Carrying amount Million KRW	Maturity dates	Interest rate
Hana Bank	Private placement bond	26,000 Million KRW	26,000	24.09.2021 – 24.09.2024	2.09% (fixed rate)
Woori Bank	Private placement bond (FRN)	24,500 Thousand USD	30,905	17.09.2021 – 13.09.2024	3M Libor +0.8%
Total			56,905		

2021
December 31

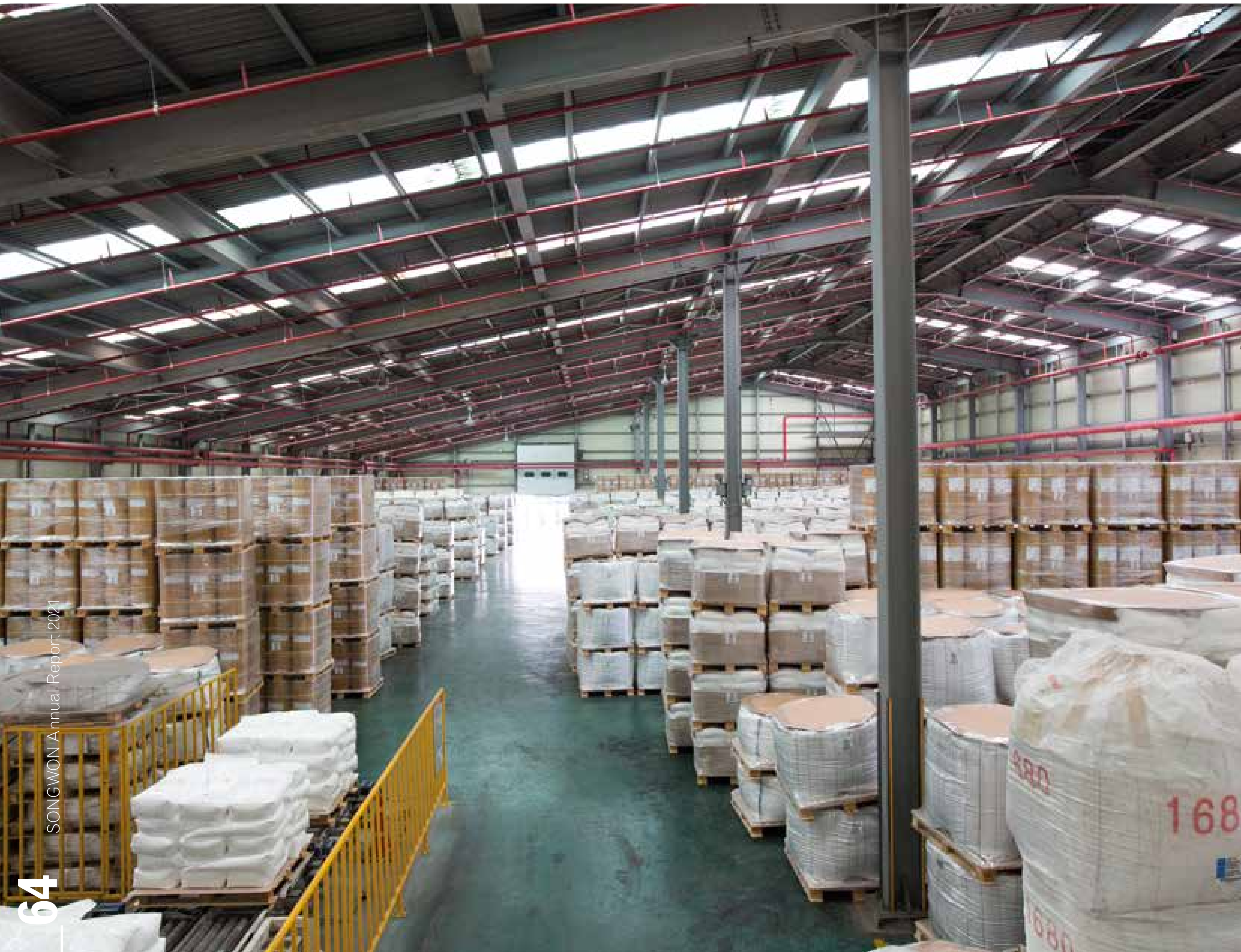
Contractual party	Form	Contract amount	Carrying amount Million KRW	Maturity dates	Interest rate
Hana Bank	Private placement bond	26,000 Million KRW	26,000	24.09.2021 – 24.09.2024	2.09% (fixed rate)
Woori Bank	Private placement bond (FRN)	24,500 Thousand USD	28,832	17.09.2021 – 13.09.2024	3M Libor +0.8%
Total			54,832		

Details of long-term borrowings as of December 31, 2022 and 2021, are as follows:

Banks	Description	Maturity date	Annual interest rate (%)	**2022** December 31 Million KRW	2021 December 31 Million KRW
Busan Bank	General Loan	08.05.2024	6M Base rate +1.61	1,770	2,950
Kyongnam Bank	General Loan	08.05.2024	12MBBR+1.32	–	4,500
Korea Development Bank	General Loan	24.08.2026	4.48	9,000	–
Subtotal				10,770	7,450
Less current portion				-1,930	-1,780
Non-current portion				8,840	5,670

Details of short-term borrowings as of December 31, 2022 and 2021, are as follows:

Banks	Description	Annual interest rate (%)	2022 December 31 Million KRW	2021 December 31 Million KRW
Woori Bank	Trade loan	2.16~5.76	24,890	46,810
Hana Bank	Trade loan	2.20~6.14	23,842	13,868
Korea Development Bank	General & trade loan	2.08~4.97	81,446	103,122
Busan Bank	General & trade loan	1.33~4.75	17,759	15,000
Kyongnam Bank	General & trade loan	4.27~5.62	28,203	14,731
NH Bank	General loan	4.84~5.46	20,000	30,000
KB Bank	General loan	4.80	10,000	10,000
Subtotal			206,140	233,531



20. EMISSION RIGHTS AND EMISSION LIABILITIES

Details of annual quantity of allocated emission allowances as of December 31, 2022, are as follows (Unit: Korean Allowance Unit - KAU):

	2021	2022	2023	2024	2025	Total
Allocated emission allowance	138,875	138,875	138,875	137,574	137,574	691,773

Changes in emission rights and emission allowances during each planned period are as follows (Units: KAU and Million KRW):

	2021*		2022		2023	
	Quantity	**Book value**	**Quantity**	**Book value**	**Quantity**	**Book value**
Beginning	23,735	375	3,171	348	–	–
Allocation	138,875	–	138,875	–	138,875	–
Allocation cancelled	–	–	–	–	–	–
Additional allocation	–	–	–	–	–	–
Disposal	-1,600	-27	–	–	–	–
Delivery to government	-157,839	–	–	–	–	–
Carryforward	-3,171	-348	–	–	–	–
Ending	–	–	142,046	348	138,875	–

*Emission rights 2021 approved by government during 2022

	2024		2025	
	Quantity	**Book value**	**Quantity**	**Book value**
Beginning	–	–	–	–
Allocation	137,574	–	137,574	–
Ending	137,574	–	137,574	–

There are no emission rights provided as collateral as of December 31, 2022.

Changes in emission liabilities included in other current liabilities during the current and prior reporting period are as follows (in Million KRW):

	2022	2021
As of January 1	14	725
Increase	–	14
Decrease	-14	-725
As of December 31	–	14

Allocated greenhouse gas emissions free of charge in 2022 were 138,875 KAU.
Estimated greenhouse gas emissions in 2022 were 141,118 KAU (2021: 163,000 KAU).

21. PENSION LIABILITY

Pension plan	2022 Million KRW	2021 Million KRW
Net defined benefit liability (incl. in pension liability)	2,682	5,945
Korean	–	–
Swiss	2,658	5,907
Indian	24	38
Net defined benefit asset (incl. in other non-current assets)	30,622	6,017
Korean	30,622	6,017

The Group has three defined benefit pension plans: one pension plan in Korea, one in Switzerland and one in India.

The following tables summarize the components of net benefit expense recognized in the consolidated statements of comprehensive income and the funded status and amounts recognized in the consolidated statement of financial position for the respective plans.

21.1 DEFINED BENEFIT OBLIGATION

Changes in the defined benefit obligation:

	Korean plan Million KRW	**Swiss plan** Million KRW	**Indian plan** Million KRW	**Total** Million KRW
Defined benefit obligation as of January 1, 2021	77,982	42,764	251	120,997
Pension cost charged to profit or loss				
Service costs	5,637	1,987	27	7,651
Interest costs	2,321	67	17	2,405
Sub-total included in profit or loss	*7,958*	*2,054*	*44*	*10,056*
Benefits paid	-5,903	-8,229	-32	-14,164
Re-measurement gains / (losses) in OCI				
Actuarial changes arising from changes in demographic assumptions	–	-1,220	2	-1,218
Actuarial changes arising from changes in financial assumptions	-4,162	-865	29	-4,998
Experience adjustments	-1,097	-3,737	79	-4,755
Sub-total included in OCI	*-5,259*	*-5,822*	*110*	*-10,971*
Employee contributions	–	900	–	900
Exchange differences	–	2,118	20	2,138
Defined benefit obligation as of December 31, 2021	74,778	33,785	393	108,956
Pension cost charged to profit or loss				
Service costs	4,999	1,465	36	6,500
Interest costs	2,636	123	27	2,786
Sub-total included in profit or loss	*7,635*	*1,588*	*63*	*9,286*
Benefits paid	-2,699	2,053	-31	-677
Re-measurement gains / (losses) in OCI				
Actuarial changes arising from changes in demographic assumptions	24	–	–	24
Actuarial changes arising from changes in financial assumptions	-15,424	-7,549	-1	-22,974
Experience adjustments	1,335	711	-1	2,045
Sub-total included in OCI	*-14,065*	*-6,838*	*-2*	*-20,905*
Employee contributions	–	780	–	780
Exchange differences	–	1,707	-21	1,686
Defined benefit obligation as of December 31, 2022	65,649	33,075	402	99,126
Weighted average duration 2021 (years)	11.60	14.10	7.40	
Weighted average duration 2022 (years)	10.00	12.36	6.52	

21.2 PLAN ASSETS

Changes in the fair value of plan assets:

	Korean plan Million KRW	**Swiss plan** Million KRW	**Indian plan** Million KRW	**Total** Million KRW
Plan assets as of January 1, 2021	75,692	31,196	244	107,132
Pension cost charged to profit or loss				
Interest income	2,251	49	15	2,315
Administration expenses	-122	-16	–	-138
Sub-total included in profit or loss	*2,129*	*33*	*15*	*2,177*
Benefits paid	-6,187	-8,229	-32	-14,448
Re-measurement gains / (losses) in OCI				
Return on plan assets (excluding amounts included in interest expenses)	-839	1,433	3	597
Sub-total included in OCI	*-839*	*1,433*	*3*	*597*
Employer contributions	10,000	1,062	105	11,167
Employee contributions	–	900	–	900
Exchange differences	–	1,483	20	1,503
Plan assets as of December 31, 2021	80,795	27,878	355	109,028
Pension cost charged to profit or loss				
Interest income	2,845	103	23	2,971
Administration expenses	-194	-16	–	-210
Sub-total included in profit or loss	*2,651*	*87*	*23*	*2,761*
Benefits paid	-2,398	2,053	-31	-376
Re-measurement gains / (losses) in OCI				
Return on plan assets (excluding amounts included in interest expenses)	-2,441	-2,745	7	-5,179
Sub-total included in OCI	*-2,441*	*-2,745*	*7*	*-5,179*
Employer contributions	17,664	948	43	18,655
Employee contributions	–	780	–	780
Exchange differences	–	1,416	-19	1,397
Plan assets as of December 31, 2022	96,271	30,417	378	127,066

The Group expects to make a contribution in the following year at the amount comparable to the contribution made during the current reporting period, and the composition of plan assets as of December 31, 2022 and 2021 is as follows:

	Korean plan		**Swiss plan**		**Indian plan**	
Structure of plan assets:	**2022**	2021	**2022**	2021	**2022**	2021
Equity	–	–	31%	35%	–	–
Debt instruments	–	–	23%	25%	–	–
Real estate	–	–	28%	19%	–	–
Investment funds	98%	95%	–	–	100%	100%
Alternative investments	–	–	17%	20%	–	–
Cash and cash equivalents	2%	5%	1%	1%	–	–
Total	100%	100%	100%	100%	100%	100%

The category equity, debt instruments, real estate and alternative investments are quoted or daily traded with exception of cash and cash equivalents. With only a few exceptions, there is no active market for plan assets in investment funds.

21.3 NET PENSION LIABILITY / ASSET

Changes in the net defined benefit liability / asset are as follows:

	Korean plan Million KRW	**Swiss plan** Million KRW	**Indian plan** Million KRW	**Total** Million KRW
Net defined benefit liability as of January 1, 2021	-2,290	-11,568	-7	-13,865
Pension cost charged to profit or loss				
Service costs	-5,637	-1,987	-27	-7,651
Administration expenses	-122	-16	–	-138
Net interests	-70	-18	-2	-90
Sub-total included in profit or loss	*-5,829*	*-2,021*	*-29*	*-7,879*
Benefits received	-284	–	–	-284
Re-measurement gains / (losses) in OCI				
Actuarial changes arising from changes in demographic assumptions	–	1,220	-2	1,218
Actuarial changes arising from changes in financial assumptions	4,162	865	-29	4,998
Return on plan assets (excluding amounts included in interest expenses)	-839	1,433	3	597
Experience adjustments	1,097	3,737	-79	4,755
Sub-total included in OCI	*4,420*	*7,255*	*-107*	*11,568*
Employer contributions	10,000	1,062	105	11,167
Employee contributions	–	–	–	–
Exchange differences	–	-635	–	-635
Net defined benefit asset as of December 31, 2021	6,017	–	–	6,017
Net defined benefit liability as of December 31, 2021	–	-5,907	-38	-5,945
Pension cost charged to profit or loss				
Service costs	-4,999	-1,465	-36	-6,500
Administration expenses	-194	-16	–	-210
Net interests	209	-20	-4	185
Sub-total included in profit or loss	*-4,984*	*-1,501*	*-40*	*-6,525*
Benefits paid	301	–	–	301
Re-measurement gains / (losses) in OCI				
Actuarial changes arising from changes in demographic assumptions	-24	–	–	-24
Actuarial changes arising from changes in financial assumptions	15,424	7,549	1	22,974
Return on plan assets (excluding amounts included in interest expenses)	-2,441	-2,745	7	-5,179
Experience adjustments	-1,335	-711	1	-2,045
Sub-total included in OCI	*11,624*	*4,093*	*9*	*15,726*
Employer contributions	17,664	948	43	18,655
Employee contributions	–	–	–	–
Exchange differences	–	-291	2	-289
Net defined benefit asset as of December 31, 2022	30,622	–	–	30,622
Net defined benefit liability as of December 31, 2022	–	-2,658	-24	-2,682

The re-measurement gains recognized in the statements of other comprehensive income are gains of 12,567 Million KRW (2021: gains of 9,522 Million KRW), net of tax. The total amount as of December 31, 2022, of accumulated losses included in retained earnings is 4,368 Million KRW (2021: accumulated losses of 16,935 Million KRW), net of tax.

The principal assumptions used in determining pension benefit obligations for the Group's plans are shown below:

	Determining net benefit expense		**Determining pension benefit obligation**	
	2022	2021	**2022** December 31	2021 December 31
Discount rate				
Korean plan	3.58%	3.05%	5.88%	3.58%
Swiss plan	2.30%	0.35%	2.30%	0.35%
Indian plan	7.45%	6.50%	7.45%	6.50%
Future salary increases				
Korean plan	3.75%	3.80%	3.78%	3.75%
Swiss plan	2.50%	1.75%	2.50%	1.75%
Indian plan	8.00%	7.00%	8.00%	7.00%

A quantitative sensitivity analysis for significant assumptions as of December 31, 2022, is as follows:

	Sensitivity level	**Impact on defined benefit obligation**
Discount rate	Change	Million KRW
Korean plan	+1.00%	5,201
	-1.00%	-6,094
Swiss plan	+0.25%	-991
	-0.25%	1,049
Indian plan	+1.00%	-16
	-1.00%	20
Salary increase		
Korean plan	+1.00%	-6,280
	-1.00%	5,434
Swiss plan	+0.25%	93
	-0.25%	-91
Indian plan	+1.00%	19
	-1.00%	-16

The sensitivity analysis above has been determined based on a method that extrapolates the impact on defined benefit obligation as a result of reasonable changes in key assumptions occurring at the end of the reporting period.

22. OTHER LONG-TERM EMPLOYEE-RELATED LIABILITIES

Other long-term employee-related liabilities consist of the following:

Description	**2022** December 31 Million KRW	2021 December 31 Million KRW
Other long-term employee benefits – Korea	7,002	4,911
Other long-term employee benefits – Others	704	765
Share-based payment-related liability	1,355	2,868
Total other long-term employee-related liabilities	9,061	8,544

22.1 OTHER LONG-TERM EMPLOYEE BENEFITS – KOREA

The parent company implements a bonus plan designed to compensate employees with a prescribed quantity of gold and entitle compensated vacation to long-term service employees. Accounting policies of the bonus plan are mostly the same as that of the defined benefit plan, except that all the past service costs and actuarial variances are recognized immediately in profit or loss.

Description	Million KRW
As of January 1, 2021	4,630
Current service costs	468
Interest costs	131
Re-measurement losses	-58
Total payment	-260
As of December 31, 2021	4,911
Current service costs	474
Interest costs	164
Re-measurement gains	1,944
Total payment	-491
As of December 31, 2022	7,002

Description	**2022** December 31	2021 December 31
Discount rate	5,79%	3.46%
Compensation increase	2.00%	2.00%
Compensation per day for vacation	KRW 101,760 – 222,480	KRW 101,760 – 222,480
Rate of increase in gold price	6.90%	6.25%
Gold price per 3.75 grams	320,000	302,000

22.2 OTHER LONG-TERM EMPLOYEE BENEFITS – OTHERS

The remaining other long-term employee benefits refer to legally established termination benefits of subsidiaries located in United Arab Emirates of 581 Million KRW (as of December 31, 2021: 612 Million KRW) and expenses for the defined contribution plan of Songwon Specialty Chemicals India Pvt. Ltd. of 123 Million KRW (as of December 31, 2021: 153 Million KRW).

22.3 SHARE-BASED PAYMENT RELATED LIABILITY

On March 31, 2013, the Group granted virtual stock options to eligible employees of subsidiaries according to the Virtual Stock Option and Long-term Incentive Plan ("LTIP"). The virtual stock options granted are an entitlement of cash compensation, and are neither a stock option, nor any other listed or unlisted security and do not grant any right to physically acquire stocks. Settlement of options exercised is in cash only. When the virtual stock option is exercised, the Group shall pay to the holder the greater of the difference between the fair market value at the exercise date (the listed stock price of Songwon Industrial Co., Ltd.) minus the strike price or nil (zero). The virtual stock options, granted under the LTIP, are subject to a vesting period of two to four years during which the holder of the options must be continuously employed by the Group.

The fair value of options, granted as of December 31, 2022 and 2021, was estimated using the following assumptions:

Description	2022	2021
Dividend yield	0.87%	0.70%
Expected volatility	45.00%	45.00%
Risk-free interest rate	2.26%	1.70%
Weighted average expected life of share options (years)	2.84	3.2
Model used	Binomial tree	Binomial tree

The carrying amount of the liability relating to the LTIP on December 31, 2022 amounts to 1,355 Million KRW (December 31, 2021: 2,868 Million KRW) and the corresponding number of share options vested as of December 31, 2022 and 2021 is 125,001 and 188,126, respectively.

The decrease of the LTIP liability led to a negative expense (income) for employee services received during the year 2022, recognized in the statements of comprehensive income, which amounts to 452 Million KRW (2021: expense of 1,255 Million KRW). There were no cancellations and modifications to the awards during the years 2022 and 2021.

Movements during the year

The following table illustrates the number and weighted average exercise prices (WAEP) of, and movements in, share options during the reporting period:

		2022		2021
Description	Number	KRW	Number	KRW
Outstanding as of January 1	471,089	17,552	551,676	17,468
Granted during the year	101,625	21,450	109,513	15,950
Forfeited during the year	-40,800	20,256	-102,350	19,492
Exercised during the year	-124,850	15,516	-87,750	12,763
Outstanding as of December 31	407,064	18,879	471,089	17,552
Exercisable as of December 31	125,001	20,605	188,126	17,334

The weighted average of remaining contractual life for the share options, outstanding as of December 31, 2022, was 3.0 years (December 31, 2021: 4.0 years). The weighted average fair value of options granted during the reporting period was 4,244 KRW (2021: 9,732 KRW).

The exercise price for options outstanding at the end of the reporting period ranges from 8,120 KRW – 27,000 KRW (2021: 8,120 KRW – 27,000 KRW).

23. OTHER FINANCIAL LIABILITIES

Other financial liabilities as of December 31, 2022 and 2021, are as follows:

	2022 December 31		2021 December 31	
Description	**Non-current** Million KRW	**Current** Million KRW	**Non-current** Million KRW	**Current** Million KRW
Derivative liabilities (note 25)	–	–	–	249
Deposits	1	–	1	–
Accrued interest expenses	–	554	–	440
Total	1	554	1	689

24. TRADE AND OTHER PAYABLES

	2022 December 31	2021 December 31
Description	Million KRW	Million KRW
Trade payables	78,386	116,139
Trade payables (related parties)	1,361	1,145
Other accounts payables	28,744	30,636
Other accounts payables (related parties)	7	7
Withholdings	1,835	1,501
Accrued expenses	28,904	23,826
Guarantee deposits	38	12
Total	139,275	173,266

Trade and other payables do not bear interest and usually become due within 30-60 days.

25. ADDITIONAL INFORMATION ON FINANCIAL INSTRUMENTS

25.1 DERIVATIVES FINANCIAL INSTRUMENTS

	2022 December 31		2021 December 31	
	Assets	**Liabilities**	**Assets**	**Liabilities**
Description	Million KRW		Million KRW	
Forward exchange contracts (current portion)	624	–	25	38
Interest rate swaps (current portion)	–	–	–	33
Currency and interest rate swaps (current portion)	1,225	–	–	178
Currency and interest rate swaps (non-current portion)	2,293	–	505	–
Total	4,142	–	530	249

25.1.1 FORWARD EXCHANGE CONTRACTS

Details of forward exchange contracts which the Group entered into with financial institutions in order to hedge the risk of foreign exchange rate fluctuation of assets denominated in foreign currencies as of December 31, 2022 and 2021 are as follows:

2022
December 31

Contractual party	**Position**	**Contract amount**	**Maturity dates**	**Contractual exchange rate (KRW)**
Citibank Korea	sell	JPY 1,608,000,000	31.01.2023~30.06.2023	10.7500
Citibank Korea	sell	EUR 15,660,000	31.01.2023~30.06.2023	1,425.00~1,467.00
Woori Bank	sell	EUR 15,660,000	31.01.2023~30.06.2023	1,425.40~1,467.80

2021
December 31

Contractual party	**Position**	**Contract amount**	**Maturity dates**	**Contractual exchange rate (KRW)**
Citibank Korea	sell	JPY 264,000,000	28.01.2022~30.06.2022	10.8210
Citibank Korea	sell	EUR 7,200,000	28.01.2022~30.06.2022	1,371.00~1,383.50
Woori Bank	sell	JPY 264,000,000	28.01.2022~30.06.2022	10.6210
Woori Bank	sell	EUR 10,800,000	28.01.2022~30.06.2022	1,365.00~1,378.00

25.1.2 CURRENCY AND INTEREST RATE SWAPS

The Group is exposed to exchange rate and interest rate risks due to the corporate bond issuance in the form of a floating rate note (refer to note 19). To hedge these risks, the Group has entered into the following currency and interest rate swaps (CRS) as of December 31, 2022 and 2021 are as follows:

2022 December 31 **Contractual party**	**Target**	**Contract amount**	**Interest exchange condition**	**Contract date**	**Maturity date**
Hongkong Woori Investment	Corporate bond (foreign currency FRN)	Receipt: 24,500 TUSD	3M Libor +0.8%	17.09.2021	13.09.2024
		Payment: 28,643 MKRW	Fixed 1.96%		

2021 December 31 **Contractual party**	**Target**	**Contract amount**	**Interest exchange condition**	**Contract date**	**Maturity date**
Hongkong Woori Investment	Corporate bond (foreign currency FRN)	Receipt: 24,500 TUSD	3M Libor +0.8%	17.09.2021	13.09.2024
		Payment: 28,643 MKRW	Fixed 1.96%		

25.1.3 INTEREST RATE SWAPS

As of December 31, 2022, the Group has not entered into additional interest rate swap contracts to hedge the risk in floating interest rate.

Due to the repayment of hedged long-term interest-bearing loans and borrowings in December 2022, the Group discontinued hedge accounting and terminated the interest rate swap. The termination resulted in a recycling of accumulated net losses of 25 Million KRW from OCI to P&L.

As of December 31, 2021 the Group has entered into the following interest rate swap contract to hedge the risk in floating interest rate:

2021 December 31 **Description**	**Interest rate swap contract**
Contract date	17.12.2021
Maturity date	19.12.2022
Contract amount	10,000 Million KRW
Fixed interest rate	3.62%
Floating interest rate	3MCD+1.72%

Due to the early repayment of the hedged long-term interest-bearing loans and borrowings in September 2021, the Group discontinued hedge accounting and terminated the existing interest rate swaps. The termination of the interest rate swaps resulted in a recycling of accumulated net losses of 527 Million KRW from OCI to P&L and a gain on derivative transactions of 58 Million KRW.

25.2 FAIR VALUES

Set out below is a comparison by class of the carrying amounts and fair value of the Group's financial instruments that are carried in the financial statements.

	2022 December 31	Carrying amount		Fair value	
		Non-current	Current	Non-current	Current
	Description	Million KRW	Million KRW	Million KRW	Million KRW
Financial assets	Financial assets at amortized cost				
	Other financial assets	1,890	2,237	1,890	2,237
	Trade and other receivables	–	177,174	–	177,174
	Cash and cash equivalents	–	104,760	–	104,760
	Total financial assets at amortized cost	*1,890*	*284,171*	*1,890*	*284,171*
	Financial assets at FVtPL				
	Forward exchange contracts	–	624	–	624
	Currency and interest rate swaps	2,293	1,225	2,293	1,225
	Other financial assets	11,847	2,591	11,847	2,591
	Total financial assets at FVtPL	*14,140*	*4,440*	*14,140*	*4,440*
Total financial assets		16,030	288,611	16,030	288,611
Financial liabilities	Financial liabilities at amortized cost				
	Other financial liabilities	1	554	1	554
	Lease liabilities	14,564	2,334	14,564	2,334
	Trade and other payables	–	139,275	–	139,275
	Interest-bearing loans and borrowings	65,745	208,070	65,745	208,070
	Total financial liabilities at amortized cost	*80,310*	*350,233*	*80,310*	*350,233*
Total financial liabilities		80,310	350,233	80,310	350,233

2021 December 31		Carrying amount		Fair value	
	Description	Non-current Million KRW	Current Million KRW	Non-current Million KRW	Current Million KRW
Financial assets	Financial assets at amortized cost				
	Other financial assets	1,931	1,120	1,931	1,120
	Trade and other receivables	–	179,720	–	179,720
	Cash and cash equivalents	–	97,744	–	97,744
	Total financial assets at amortized cost	*1,931*	*278,584*	*1,931*	*278,584*
	Financial assets at FVOCI				
	Other financial assets	102	–	102	–
	Total financial assets at FVOCI	*102*	*–*	*102*	*–*
	Financial assets at FVtPL				
	Forward exchange contracts	–	25	–	25
	Currency and interest rate swaps	505	–	505	–
	Other financial assets	9,530	–	9,530	–
	Total financial assets at FVtPL	*10,035*	*25*	*10,035*	*25*
Total financial assets		12,068	278,609	12,068	278,609
Financial liabilities	Financial liabilities at amortized cost				
	Other financial liabilities	1	440	1	440
	Lease liabilities	15,454	2,480	15,454	2,480
	Trade and other payables	–	173,266	–	173,266
	Interest-bearing loans and borrowings	60,502	235,311	60,502	235,311
	Total financial liabilities at amortized cost	*75,957*	*411,497*	*75,957*	*411,497*
	Financial liabilities at FVOCI				
	Interest rate swaps	–	33	–	33
	Total financial liabilities at FVOCI	*–*	*33*	*–*	*33*
	Financial liabilities at FVtPL				
	Forward exchange contracts	–	38	–	38
	Currency and interest rate swaps	–	178	–	178
	Total financial liabilities at FVtPL	*–*	*216*	*–*	*216*
Total financial liabilities		75,957	411,746	75,957	411,746

The fair value of the financial assets and liabilities are included at the amount at which the instrument could be exchanged in a current transaction between willing parties, other than in a forced or liquidation sale.

The following methods and assumptions were used to estimate the fair values:

- cash and cash equivalents, trade and other receivables, trade payables and other current liabilities approximate their carrying amounts largely due to the short-term maturities of these instruments;
- fair value of financial assets at FVOCI and financial assets at FVtPL are derived from quoted market prices in active markets, if available;
- fair value of unquoted financial assets at FVOCI and financial assets at FVtPL are estimated using appropriate valuation techniques (refer to note 25.2.1).

25.2.1 FAIR VALUE HIERARCHY

The Group uses the following hierarchy for determining and disclosing the fair value of financial instruments by valuation technique:

Description	Valuation technique
Level 1	Quoted (unadjusted) prices in active markets for identical assets or liabilities
Level 2	Other techniques for which all inputs which have a significant effect on the recorded fair value are observable either directly or indirectly
Level 3	Techniques which use inputs that have a significant effect on the recorded fair value that are not based on observable market data

As of December 31, 2022 and 2021, the Group held the following financial instruments carried at fair value on the statements of financial position:

		December 31, 2022	Level 1	Level 2	Level 3
		Million KRW	Million KRW	Million KRW	Million KRW
Financial assets	Derivatives				
	Forward exchange contracts	624	–	624	–
	Currency and interest rate swaps	3,518	–	3,518	–
	Total derivatives	*4,142*	–	*4,142*	–
	Debt instruments				
	Exchange traded fund at FVtPL	14,438	–	14,438	–
	Total debt instruments	*14,438*	–	*14,438*	–
	Total financial assets	18,580	–	18,580	–

	December 31, 2021 Million KRW	**Level 1** Million KRW	**Level 2** Million KRW	**Level 3** Million KRW
Financial assets				
Derivatives				
Forward exchange contracts	25	–	25	–
Currency and interest rate swaps	505	–	505	–
Total derivatives	*530*	–	*530*	–
Debt instruments				
Exchange traded fund at FVtPL	9,530	–	9,530	–
Total debt instruments	*9,530*	–	*9,530*	–
Equity instruments				
Equity instruments at FVOCI	102	–	–	102
Total equity instruments	*102*	–	–	*102*
Total financial assets	10,162	–	10,060	102
Financial liabilities				
Derivatives				
Forward exchange contracts	38	–	38	–
Interest rate swaps	33	–	33	–
Currency and interest rate swaps	178	–	178	–
Total derivatives	*249*	–	*249*	–
Total financial liabilities	249	–	249	–

During the reporting periods ended December 31, 2022 and 2021, there were no transfers between Level 1 and Level 2 fair value measurements. For the financial assets and financial liabilities for which the fair values are disclosed (refer to note 25.2) the carrying amounts are reasonable approximations of fair values and are measured using Level 3 measurement methods, except for cash and cash equivalents.

25.3 FINANCIAL RISK MANAGEMENT OBJECTIVES AND POLICIES

The Group's principal financial liabilities comprise loans and borrowings, trade and other payables, and other financial liabilities. The main purpose of these financial liabilities is to finance the Group's operations. The Group has trade accounts and other accounts receivables, cash and cash equivalents and other financial assets that arrive directly from its operations. The Group also holds financial instruments at FVOCI and financial instruments at FVtPL and enters into derivative transactions and applies hedge accounting for cash flow hedges if applicable.

The Group is exposed to market, credit and liquidity risks. The Group's management oversees the management of these risks through appropriate risk assessment and monitoring activities to minimize their effects.

25.3.1 MARKET RISK

Market risk refers to the risk that a financial instrument's fair value of future cash flows will fluctuate because of changes in market prices. Market prices comprise two types of risk:

- interest rate risk; and,
- foreign currency risk.

Financial instruments affected by market risk include loans and borrowings, deposits, financial instruments at FVOCI, financial instruments at FVtPL and derivative financial instruments. The sensitivity analyses in the following sections relate to the position as of December 31, 2022 and 2021.

Interest rate risk

Interest rate risk refers to the risk that a financial instrument's fair value or future cash flows will fluctuate because of changes in market interest rates. The Group's exposure to the risk of changes in market interest rates relates primarily to the Group's interest-bearing loans and borrowings as well as bank deposits with floating interest rates.

The Group's exposure to the risk of changes in market interest rates relates substantially to the Group's interest-bearing loans and borrowings with floating interest rates, which exposes the Group to cash flows risk. In response, the Group is minimizing the risk partially through a currency and interest rate swap contract or choosing the most favorable financing instruments by switching to the loans with more favorable conditions or improving the Group's credit rating.

Interest rate sensitivity

The following table demonstrates the sensitivity to a reasonably possible change in interest rates. The Group's exposure to the risk of changes in market interest rates relates primarily to the Group's interest-bearing loans and borrowings as well as bank deposits with floating interest rates. With all other variables held constant, the Group's profit before tax is affected through the impact on floating rate borrowings as follows:

	Increase / (decrease) in %	**Effect on profit before tax** Million KRW
December 31, **2022**	1.00	-1,067
	-1.00	1,067
December 31, 2021	1.00	-1,013
	-1.00	1,013

Foreign currency risk

The Group's exposure to the risk of changes in foreign exchange rates relates primarily to the Group's operating activities. The risk of foreign exchange primarily relates to US Dollar (USD), Euro (EUR), Japanese Yen (JPY), Swiss Franc (CHF), United Arab Emirates Dirham (AED) and to the Indian Rupee (INR).

Foreign exchange risks arise when commercial transactions, recognized assets or liabilities are denominated in a currency that is not the entity's functional currency.

The objective of the management of foreign currency risk is to maximize the value of the firm through minimizing the fluctuation of net profit and uncertainty arising from the fluctuation in foreign currency. To accomplish this, the Group uses a strategy to accord the collection terms of receivables and payment terms of payables denominated in USD considering the similar volume of exports and imports. In regard to EUR and JPY, the Group manages the risk through currency forward contracts.

Foreign currency sensitivity

The Group carries out a sensitivity analysis for the dominant foreign currencies: US Dollar (USD), Euro (EUR), Japanese Yen (JPY), Swiss Franc (CHF), United Arab Emirates Dirham (AED) and the Indian Rupee (INR). The assumed possible currency fluctuations are based on historical observations and future prognoses. The financial instruments are incorporated into calculations. The following table demonstrates the sensitivity of consolidated net profit before tax to a reasonably possible shift in exchange rates related to financial instruments held in the balance sheet. Assuming that all the other variables are constant and only the foreign exchange rate changes by 10%, the impacts on net profit for the years ended on December 31, 2022 and 2021, are as follows:

		2022 December 31		2021 December 31
Currency	**10% increase** Million KRW	**10% decrease** Million KRW	**10% increase** Million KRW	**10% decrease** Million KRW
USD	6,566	-6,566	2,380	-2,380
EUR	1,007	-1,007	1,418	-1,418
JPY	4,451	-4,451	2,783	-2,783
CHF	278	-278	272	-272
AED	-202	202	-225	225
INR	131	-131	209	-209
Total	12,231	-12,231	6,837	-6,837

The Group's exposure to foreign currency changes for all other currencies is not material.

25.3.2 CREDIT RISK

Credit risk is the risk that the counterparty will not meet its obligations under a financial instrument or customer contract, leading to a financial loss. The Group is exposed to credit risk from its operating activities (primarily for trade and other receivables) and investing activities.

The Group maintains a policy to keep trade relationship only with the customers with high credit rating assessed by credit assessment, considering their financial position, past experience of defaults and other indicators of default. If the credit rating of a customer worsens, the Group sets an individual credit limit on that customer and intensively manages its credit risk. In addition, the Group minimizes the credit risk by maintaining the exposure to the credit risk at an insignificant level through ongoing management including periodical reviews of all the customers. The maximum exposure to credit risk at the reporting date is the carrying value of each class of financial assets disclosed in note 25.2.

The Group is also exposed to the credit risk with regard to bank deposits, as well as cash and cash equivalents in which the maximum exposure to credit risk at the reporting date is the carrying value. The exposure to the related credit risk, however, is relatively restricted because the Group maintains relationships with the financial institutions with high credit ratings.

25.3.3 LIQUIDITY RISK

Liquidity risk is the risk that the Group will encounter difficulty in meeting obligations associated with financial liabilities due to the unfavorable economy of the industry or financial markets.

The Group manages its liquidity risk through its own strategy and plans which consider the maturity of financial instruments and expected operating cash flows and include the policy to map out the maturity of financial assets and liabilities.

In addition, the Group maintains credit facilities with the banks including overdraft to respond to an unexpected shortage in liquidity. In response to expansion of the business, the Group manages funding schedules and ongoing review procedures, considering the appropriate mix of long-term and short-term loans and borrowings, to maintain the consistency and flexibility in obtaining liquidity and stable financing.

The details of maturity profile of the Group's financial liabilities and lease liabilities, excluding financial derivative instruments, based on contractual undiscounted payments as of December 31, 2022 and 2021, are as follows:

	Less than a month	**1 to 3 months**	**3 to 12 months**	**1 to 5 years**	**> 5 years**	**Total**
2022 December 31	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW
Interest-bearing loans and borrowings	19,327	124,209	64,534	65,745	–	273,815
Trade and other payables	109,868	22,072	7,335	–	–	139,275
Lease liabilities	278	563	2,022	7,655	9,311	19,829
Other financial liabilities	486	42	26	1	–	555
Total	129,959	146,886	73,917	73,401	9,311	433,474

	Less than a month	**1 to 3 months**	**3 to 12 months**	**1 to 5 years**	**> 5 years**	**Total**
2021 December 31	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW
Interest-bearing loans and borrowings	23,834	33,581	177,896	60,502	–	295,813
Trade and other payables	146,162	26,776	328	–	–	173,266
Lease liabilities	269	545	2,211	7,899	10,206	21,130
Other financial liabilities	320	96	24	1	–	441
Total	170,585	60,998	180,459	68,402	10,206	490,650

25.3.4 CAPITAL MANAGEMENT

The capital managed by the Group is identical to the total amount of equity presented in the consolidated statements of financial position. The primary objective of the Group's capital management is to ensure its continued ability to provide consistency for its equity shareholders through a combination of capital growth and distribution. In order to achieve this objective, the Group monitors its gearing to balance risk and returns at an acceptable level, and also maintains a sufficient funding base to enable the company to meet its working capital and strategic investment needs. To maintain or adjust the capital structure, the company may adjust the dividend payment to shareholders, return capital to shareholders or issue new shares considering not only the short-term position, but also its long-term operational and strategic objectives. At Group level the debt ratio is reviewed regularly. The debt-equity ratio as of December 31, 2022 and 2021, is 78% and 105%, respectively.

On a monthly basis, all subsidiaries have to report key performance indicators, which also include capital management information.

26. COMMITMENTS AND CONTINGENCIES

26.1 CONTINGENT LIABILITIES

There are no current proceedings of lawsuits, claims, investigations and negotiations in relation to the product liability, mercantile law, environmental protection, health and safety etc., which could have a significant impact on the business operations and on the Group's consolidated financial position or income. Contingent liabilities in the Group are related to tax appeals of 224 Million KRW (2021: 235 Million KRW) and a customer complaint concerning the quality of a SONGWON product. The assessed damage was valued at 157 Million KRW (2021: 808 Million KRW). Further investigations are being carried. However, it was considered improbable in the fiscal year under review that there would be an outflow of economic resources relating to the contingent liability.

26.2 OTHER LEASE COMMITMENTS

The Group has entered into short-term and low-value leases on certain buildings, vehicles, furniture and fixtures. The lease periods for low-value leases are below 5 years. There are no restrictions placed upon the Group by entering into these leases. Future minimum short-term and low-value lease payments as of December 31, 2022 and 2021 are as follows:

	2022	2021
	December 31	December 31
Description	Million KRW	Million KRW
Short-term lease commitments		
Within one year	-2	-6
Total short-term lease commitments	*-2*	*-6*
Low-value lease commitments		
Within one year	-66	-70
After one year but not more than five years	-61	-121
Total low-value lease commitments	*-127*	*-191*
Total	-129	-197

26.3 OTHER COMMITMENTS

As part of the ordinary business activities, the Group enters into various contractual commitments for the purchase of inventories, property, plant and equipment, intangible assets and investment properties. As of December 31, 2022, the Group entered into commitments to purchase property, plant and equipment, as well as raw materials amounting to 11,444 Million KRW (December 31, 2021: 18,765 Million KRW).

Details of the Group's available short-term credit line facilities (excluding general loans) as of December 31, 2022, are as follows:

Description	**Currency**	**Credit limit**	**Used**	**Unused**
USANCE and L/C for import	Thousand USD	22,000	6,036	15,964
D/A and D/P	Thousand USD	103,000	47,531	55,469
	Million KRW	12,000	8,203	3,797
Secured loan of credit sales	Million KRW	9,000	8,724	276
Other foreign currency guarantees	Thousand USD	8,750	913	7,837
Bond issuance payment guarantee	Million KRW	26,000	26,000	–
	Thousand USD	24,990	24,990	–
	Total Million KRW	47,000	42,927	4,073
	Total Thousand USD	158,740	79,470	79,270

27. ASSETS PLEDGED AS COLLATERAL AND GUARANTEES

Details of property, plant and equipment and investment property pledged by the Group as collateral for interest-bearing loans and borrowings as of December 31, 2022 and 2021, presented in the maximum pledge amount, are as follows:

Pledged to	Pledged assets		**2022** December 31	2021 December 31
Property, plant and equipment (Joint collateral in connection with long-term loan)				
Busan Bank	Land, buildings and machinery	Million KRW	30,000	30,000
Kyongnam Bank	Land, buildings and machinery	Million KRW	18,000	18,000
Property, plant and equipment and investment property (Collateral for other than long-term loan)				
Woori Bank	Land, buildings and machinery	Million KRW	120,000	120,000
Hana Bank	Land, buildings and machinery	Million KRW	80,400	60,000
Korea Development Bank	Land, buildings, investment properties and machinery	Million KRW	96,600	57,000
Busan Bank	Land, buildings and machinery	Thousand USD	24,000	24,000
Total		Million KRW	345,000	285,000
		Thousand USD	24,000	24,000

No other items of property, plant and equipment are pledged as collateral for interest-bearing loans and borrowings as of December 31, 2022 and 2021.

Due to the full released payment guarantees by Korean banks in the first quarter 2021, there were no activities in financial year ended December 31,2022.

Payment guarantee to Seoul insurance company

In the financial year ended December 31, 2022, the Group possesses payment guarantees to Seoul guarantee insurance company for government subsidy return guarantee of 71,5 Million KRW as well as deposit guarantee for approval of development activity and urban planning facility business of 49,6 Million KRW.

28. OPERATING PROFIT AND OTHER INCOME / EXPENSES

28.1 RESEARCH AND DEVELOPMENT EXPENSE

Research and development expenses of 6,284 Million KRW (2021: 7,375 Million KRW) are recorded in the consolidated statements of comprehensive income. Development expenses are not capitalized because the conditions for capitalization have not been met.

28.2 SELLING AND ADMINISTRATION EXPENSES

	2022	2021 (restated)*
Description	Million KRW	Million KRW
Sales-related costs	-45,559	-45,303
Personnel expenses	-49,270	-52,253
Travelling and entertainment	-4,416	-2,348
Depreciation and amortization	-2,356	-2,369
Administration expenses	-9,294	-10,135
IT expenses	-3,547	-3,036
Others	-2,062	-1,032
Total	-116,504	116,476

*Refer to note 2.21 for further details

28.3 OTHER INCOME

	2022	2021
Description	Million KRW	Million KRW
Fee income	72	120
Income resulting from government grants received	1,454	911
Gains on disposal of property, plant and equipment	6	269
Gains on disposal of intangible assets	–	2,196
R&D sales income	860	843
Rental income	15	17
Miscellaneous income	1,426	1,682
Total	3,833	6,038

28.4 OTHER EXPENSES

Description	**2022** Million KRW	2021 Million KRW
Miscellaneous expenses	-701	-1,882
Losses on disposal of property, plant and equipment	-1,437	-2,058
Impairment of tangible assets	-918	-1,042
Impairment of right-of-use asset	–	-1,454
Impairment of inventory	–	-749
Impairment of other non-current assets	–	-48
Impairment of intangible assets	-391	–
Total	-3,447	-7,233

28.5 EXPENSES CLASSIFIED BY NATURE

Description	**2022** Million KRW	2021 (restated)* Million KRW
Purchased material	-818,604	-555,695
Freight and logistic costs	-43,186	-65,871
Energy costs	-53,741	-43,612
Personnel expenses	-130,702	-128,288
Depreciation and amortization	-33,524	-35,138
Other expenses	-68,083	-71,105
Total	-1,147,840	-889,709
Thereof recorded in cost of sales	-1,027,889	-776,000
Thereof recorded in selling and administration costs	-116,504	-116,476
Thereof recorded in other expenses	-3,447	-7,233
Total	-1,147,840	-889,709

*Refer to note 2.21 for further details

28.6 FINANCE INCOME

Description	**2022** Million KRW	2021 Million KRW
Gains on foreign exchange transactions	33,915	14,491
Gains on foreign exchange translations	23,564	11,397
Gains on derivative transactions	1,688	1,364
Gains on valuation of derivatives	3,816	352
Gain on valuation of financial assets FVtPL	189	–
Interest on loans and receivables	635	259
Total finance income	63,807	27,863

28.7 FINANCE EXPENSES

Description	**2022** Million KRW	2021 Million KRW
Interest on borrowings	-8,773	-5,874
Total interest expenses	-8,773	-5,874
Losses on foreign exchange transactions	-32,084	-13,145
Losses on foreign exchange translations	-28,649	-12,338
Losses on derivative transactions	-337	-689
Losses on valuation of derivatives	–	-38
Loss on disposal of financial assets FVtPL	-67	–
Loss on valuation of financial assets FVtPL	-31	–
Bank charges	-288	-217
Total finance expenses	-70,229	-32,301

28.8 NET GAINS AND LOSSES OF FINANCIAL INSTRUMENT CLASSES

Description	**2022** Million KRW	2021 Million KRW
Financial assets at amortized cost	7,549	6,907
Financial assets at FVOCI	-63	929
Financial assets at FVtPL	5,258	1,027
Financial liabilities at amortized cost	-18,941	-12,117
Financial liabilities at FVtPL	–	-38
Total net gains and losses of the classes of financial instruments	-6,197	-3,292
Net gains / (losses) of financial instruments recognized in the consolidated statement of comprehensive income		
Finance expense*	-69,941	-32,084
Finance income	63,807	27,863
Total	*-6,134*	*-4,221*
Net gains / (losses) of financial instruments recognized in the consolidated statement of other comprehensive income		
Financial assets at FVOCI	-63	929
Total	*-63*	*929*
Total	-6,197	-3,292

*Excluding bank charges

29. INCOME TAX EXPENSES

The major components of income tax expense in the statements of comprehensive income are as follows:

29.1 CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

Description	**2022** Million KRW	2021 Million KRW
Current income tax charge	-53,921	-33,685
Adjustments in respect of current income tax of previous year	963	1,113
Deferred income taxes related to changes of temporary differences, net	5,605	4,013
Deferred income taxes related to tax loss carry forwards	-195	96
Deferred income taxes related to changes in tax rate	-4,773	-3,836
Deferred income taxes recognized directly in other comprehensive income	3,153	2,324
Income tax expenses	-49,168	-29,975

Description	**2022** Million KRW	2021 Million KRW
Accounting profit before income taxes	181,100	101,184
At parent company's statutory income tax rate of 23.93% (2021: 23.65%)	-43,330	-23,929
(Increase) / decrease in income tax expenses resulting from:		
Adjustments in respect of current income tax of previous years	963	1,113
Non-temporary differences	-576	-487
Tax credits	603	274
Non-deductible expenses / (non-taxable income)	-46	-29
Effect of different tax rates in tax jurisdiction	-6,890	-6,888
Others	108	-29
At the effective income tax rate 27.15% (2021: 29.62%)	-49,168	-29,975

29.2 DEFERRED TAX

Deferred tax relates to the following:

	Consolidated statements of financial position		Consolidated statements of comprehensive income	
	2022 December 31	2021 December 31	**2022** December 31	2021 December 31
Description	Million KRW	Million KRW	Million KRW	Million KRW
Net pension obligation	-2,585	864	-290	1,304
Other long-term employment benefits	1,666	1,400	266	135
Trade receivables	145	176	-31	24
Inventories	4,113	2,237	1,876	528
Fixed assets	-8,853	-9,488	635	332
Gain on revaluation of land	-26,159	-27,396	1,237	78
Other non-current financial assets	-267	-279	12	-54
Other current financial assets	361	227	120	98
Other current assets	826	1,186	-360	281
Other non-current financial liabilities	-39	-101	62	69
Current lease liabilities	282	294	-12	54
Other current financial liabilities	1,194	546	648	-170
Other current liabilities	74	210	-136	15
Intangible assets	3	60	-57	-90
Loss on interest swaps	–	8	–	–
Loss available for offsetting against future taxable income	–	195	-195	96
Investments in subsidiaries	-337	-274	-63	-180
Translation difference	–	–	78	77
Deferred tax income			3,790	2,597
Net deferred tax liabilities	-29,576	-30,135		

Reflected in the statements of financial positions as follows:

Deferred tax assets	8,585	7,387
Deferred tax liabilities	-38,161	-37,522

The Group offsets tax assets and liabilities if, and only if, it has a legally enforceable right to do so, and the deferred tax assets and deferred tax liabilities relate to income taxes levied by the same tax authority.

Reconciliation of deferred tax liabilities, net:

	2022	2021
Description	Million KRW	Million KRW
Opening balance as of January 1	-30,135	-30,331
Deferred tax recognized in statements of comprehensive income	3,790	2,597
Deferred tax recognized in other comprehensive income (note 18.4)	-3,153	-2,324
Translation differences	-78	-77
Closing balance as of December 31	-29,576	-30,135

Expecting sufficient taxable income, the Group recognized deferred income tax assets to the extent of future taxable income. For the following deductible temporary differences, no deferred tax assets as of December 31, 2022 and 2021, were recognized.

Description	2022 Million KRW	2021 Million KRW
Temporary differences related to investments in subsidiaries	8,655	7,979
Total	8,655	7,979

As of December 31, 2022, the Group consumed recognized tax loss carry forwards and tax credit carry forwards.

Expected timing of expiration of recognized tax loss carry forwards and tax credit carry forwards, as of December 31, 2021, was as follows:

	Recognized deferred tax assets	
2021 December 31	Tax loss carry forwards Million KRW	Tax credit carry forwards Million KRW
less 1 year	–	–
1-5 years	–	–
5 years and later	195	–
Total	195	–

30. EARNINGS PER SHARE

Basic earnings per share are calculated by dividing net profit for the year attributable to ordinary equity holders of the parent company by the average number of ordinary shares outstanding during the year. There is no difference between basic and diluted earnings per share in 2022 and 2021, as no securities with dilutive features have been issued as of the end of the reporting periods.

The following reflects the income and share data used in the basic per share computations:

	2022	2021
Description	KRW	KRW
Net profit attributable to ordinary equity holders of the parent	131,931,556,030	72,272,884,671
Weighted average number of ordinary shares	24,000,000	24,000,000
Earnings per share (basic / diluted)	5,497	3,011

31. CASH FLOW STATEMENT

Cash and cash equivalents in the consolidated statements of cash flows are equal to those in the consolidated statements of financial position.

The Group's consolidated statement of cash flows is prepared using the indirect method. The adjustments to the net profit for the period of the non-cash and non-operating items and changes in operating assets and liabilities for the years ended December 31, 2022 and 2021, are as follows:

		2022	2021
Description	Notes	Million KRW	Million KRW
Adjustments			
Depreciation of property, plant and equipment	7	29,211	30,354
Depreciation of right-of-use assets	8	2,714	2,676
Depreciation of investment properties	9	10	15
Amortization of intangible assets	10	800	614
Impairment of tangible assets	7	918	1,042
Impairment of right-of-use assets	8	–	1,454
Impairment of intangible assets	10	391	–
Impairment of non-current financial assets		–	9
Impairment of other non-current assets		–	48
Impairment of inventories	14	1,777	749
Losses on disposals of property, plant and equipment, net	7	1,431	1,788
Gain on disposal of intangible assets, net	28.3	–	-2,196
Share of result from investments accounted using the equity method	12	-2,020	-1,103
Share-based compensation expenses	22.3	-452	1,255
Pension costs	21.3	6,525	7,879
Other long-term employee benefits expenses	22.1, 22.2	2,521	635
Finance income		-11,645	-7,270
Finance expenses		21,122	13,441
Income tax expenses	29.1	49,168	29,975
Total		102,471	81,365

	2022	2021
Description	Million KRW	Million KRW
Changes in operating assets and liabilities		
Trade receivables	-5,306	-52,508
Other receivables	-573	147
Other current assets	445	-4,309
Other current financial assets	-1,815	10
Inventories	-40,728	-141,262
Trade payables	-35,853	43,597
Other payables	147	9,406
Other current financial liabilities	3,566	-178
Other current liabilities	1,711	1,371
Pension liabilities	-18,751	-10,617
Other long-term employee benefits	-1,625	-942
Total	-98,782	-155,285

Changes in liabilities arising from financing activities for the years ended December 31, 2022 and 2021, are as follows:

	Current interest-bearing loans and borrowings	Non-current interest-bearing loans and borrowings	Other financial liabilities
	Million KRW	Million KRW	Million KRW
As of January 1, 2021	158,940	59,647	3,461
Cash flows	79,579	-2,121	-1,242
Foreign exchange movement	-906	674	-1,468
Net losses on valuation of financial liabilities	–	–	-61
Reclassification	-2,302	2,302	–
As of December 31, 2021	235,311	60,502	690
Cash flows	-21,309	–	94
Foreign exchange movement	-689	–	-229
Reclassification	-5,243	5,243	–
As of December 31, 2022	208,070	65,745	555

32. RELATED PARTY DISCLOSURES

The companies listed below have been identified as related parties:

Company name	Location	Relation with the Group	Remarks
Songwon Baifu Chemicals (Tangshan) Co., Ltd.	China	Joint Venture	Jointly controlled by Songwon Group Holding AG
Songwon Moolsan Co., Ltd.	Korea	Other (refer to note 32.5)	A company that has significant influence on the Group
Kyungshin Industrial Co., Ltd.	Korea	Other (refer to note 32.5)	A subsidiary of Songwon Moolsan Co., Ltd.

The following table provides the total amount of transactions that have been entered into with related parties for the relevant financial years and balances as per year-end:

		2022	2021
Related party	**Description**	Million KRW	Million KRW
Songwon Moolsan Co., Ltd.	Selling and administration costs	-80	-79
Songwon Baifu Chemicals (Tangshan) Co., Ltd.	Sales	64	–
	Cost of sales	-28,826	-16,728
Total	Sales	64	–
	Cost of sales	-28,826	-16,728
	Selling and administration costs	-80	-79

		2022	2021
		December 31	December 31
Related party	**Description**	Million KRW	Million KRW
Songwon Moolsan Co., Ltd.	Other non-current financial assets	33	33
	Trade and other payables	7	7
Songwon Baifu Chemicals (Tangshan) Co., Ltd.	Trade and other receivables	63	–
	Trade and other payables	1,361	1,145
Total	Other non-current financial assets	33	33
	Trade and other receivables	63	–
	Trade and other payables	1,368	1,152

32.1 THE ULTIMATE PARENT

Songwon Industrial Co., Ltd. is the ultimate parent based and listed in Korea.

32.2 TERMS AND CONDITIONS OF TRANSACTIONS WITH RELATED PARTIES

Outstanding balances of related parties at the year-end are unsecured, interest free and settlement occurs in cash. There have been no guarantees provided or received for any related party receivables or payables. For the year ended December 31, 2022, the Group has not recorded any impairment of receivables relating to amounts owed by related parties (December 31, 2021: none). This assessment is undertaken periodically by examining the financial position of the related party and the market in which the related party operates.

32.3 TRANSACTIONS WITH KEY MANAGEMENT PERSONNEL

During the financial year 2022, no other transactions with key management personnel than those disclosed in 32.4 took place.

32.4 COMPENSATION OF KEY MANAGEMENT PERSONNEL OF THE GROUP

	2022	2021
Description	Million KRW	Million KRW
Short-term employee benefits	13,930	9,934
Post-employment benefits	534	777
Other long-term benefits	1,218	540
Share based payments	-100	297
Termination benefits	–	528
Total compensation paid to key management personnel	15,582	12,076

The amounts disclosed in the table are the amounts recognized as an expense during the reporting period related to key management personnel. Key management personnel are those persons with authority and responsibility for planning, directing and controlling the activities of the entity, directly or indirectly, including any director (whether executive or otherwise) of that entity.

32.5 OTHER RELATED PARTIES

Other related parties are Songwon Moolsan Co., Ltd. (Korea) which has significant influence on the Group due to the interest held in the share capital of the parent company of 23.88%. Further, the subsidiary of Songwon Moolsan Co., Ltd., Kyungshin Industrial Co., Ltd., which holds interest in the share capital of the parent company of 9.15%, is identified as a related party of the Group.

33. IMPACT OF GLOBAL ECONOMIC SITUATION ON CONSOLIDATED FINANCIAL STATEMENTS

The Group closely monitors the global situation and assesses the future impact of the COVID-19 pandemic as well as the Russian-Ukrainian conflict on the consolidated financial statements on a regular basis. For the financial year 2022, the following assessments were performed, amongst others:

INDICATION OF IMPAIRMENT ON PROPERTY, PLANT AND EQUIPMENT AND INTANGIBLE ASSETS

The Group assessed whether there were any internal and external indicators of impairment of property, plant and equipment and intangible assets. For the year ended December 31, 2022 no impairment of property, plant and equipment and intangible assets has been recognized (2021: no impairment) due to the COVID-19 outbreak or related to the Russian-Ukrainian conflict.

EXPECTED CREDIT LOSS (ECL) OF TRADE RECEIVABLES AND FINANCIAL ASSETS

In order to determine the impact of the global economic situation on the ECL model in accordance with KIFRS 1109, the Group reassessed past events, current conditions and forecasts of future economic conditions. As of December 31, 2022, the Group identified the changes in risk indicators considering the nature of risk such as geographical location of debtors which has been reflected in the ECL model for the recognition of allowance on expected credit risks. Such parameter adjustments resulted in a decrease in the allowance on ECL by 64 Million KRW in the consolidated financial statements as of December 31, 2022.

GOVERNMENT GRANTS RECEIVED

For the year ended December 31, 2022, the Company received government grants of 1,454 Million KRW to assist the entity in response to the COVID-19 pandemic, impacting the current economic situation.

34. EVENTS AFTER THE REPORTING PERIOD

The consolidated financial statements for the year ended December 31, 2022, were approved by the Board of Directors of the parent company on January 27, 2023.

There have been no material events between December 31, 2022 and the date of authorization for issue of these financial statements that would require adjustments of the consolidated financial statements or disclosure.

35. GLOBAL MINIMUM TAX

The Organization for Economic Cooperation and Development (OECD)/G20 inclusive Framework on Base Erosion and Profit Shifting (BEPS) addresses the tax challenges arising from the digitalization of the global economy. Global Minimum Tax (Pillar Two) was released and is applicable to Multinational Enterprises (MNEs) with revenue in excess of EUR 750 Million per their consolidated financial statements.

National Assembly of South Korea passed into law new Global Minimum Tax rules to align with the OECD BEPS Pillar Two in December 2022. The requlation will be included in the Adjustment of International Taxes Act and will be effective for fiscal years beginning on or after 1 January 2024. However, the Enforcement Decrees that provide further details on the application of the legislation are only expected to be finalized later in 2023.

In South Korea, Pillar Two legislation is not yet considered substantively enacted as of December 31, 2022, for IAS 12 purposes. The Group, therefore, has not recognized any tax effect arising from the Global Minimum Tax in its consolidated financial statements as of December 31, 2022, and for the year then ended.

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