Korea Mine Rehabilitation and Mineral Resources Corporation and Subsidiaries

Consolidated Financial Statements
December 31, 2022 and 2021

(With Independent Auditors' Report Thereon)

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Independent Auditors' Report

To The Board of Directors and Shareholders
Korea Mine Rehabilitation and Mineral Resources Corporation:

Opinion

We have audited the consolidated financial statements of Korea Mine Rehabilitation and Mineral Resources Corporation and its subsidiaries ("the Group"), which comprise the consolidated statements of financial position as of December 31, 2022 and 2021, the consolidated statements of comprehensive income (loss), changes in equity and cash flows for the year ended December 31, 2022 and the period from September 10 to December 31, 2021, and notes to the consolidated financial statements, comprising significant accounting policies and other explanatory information.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Group as of December 31, 2022 and 2021, and its consolidated financial performance and its consolidated cash flows for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 in accordance with Accounting Standards for Korean Government-owned Public Corporation and Quasi-governmental Institutions in the Republic of Korea ("Government Accounting Standards").

Basis for Opinion

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

Emphasis of Matters

Without qualifying our opinion, we draw attention to the following:

(a) Material uncertainty on the ability to continue as a going concern

As described in Note 48 to the consolidated financial statements, as of December 31, 2022, the Group has accumulated deficits of ₩3,715.9 billion, and its total liabilities exceeded total assets by ₩1,675.9 billion. These conditions, as set forth in Note 48 to the consolidated financial statements, indicate the existence of a material uncertainty that may cast significant doubt on the Group's ability to continue as a going concern. The Government of the Republic of Korea, controlling shareholder of Korea Mine Rehabilitation and Mineral Resources Corporation, is currently seeking remedial measures.

(b) Basis of Preparation

As described in Note 2 to the consolidated financial statements, the Group applies Korean International Financial Reporting Standards where accounting provisions have not been specified under Government Accounting Standards.

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 Government Accounting Standards, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

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

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

Auditors' Responsibilities for the Audit of the Consolidated Financial Statements

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

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

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.

- Evaluate the appropriateness of accounting policies used in the preparation of the consolidated financial statements and the reasonableness of accounting estimates and related disclosures made by management.

- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditors' report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditors' report. However, future events or conditions may cause the Group to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

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

Other Matter

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

KPMG Samjong Accounting Corp.

Seoul, Korea

February 24, 2023

This report is effective as of February 24, 2023, the audit report date. Certain subsequent events or circumstances, which may occur between the audit report date and the time of reading this report, could have a material impact on the accompanying consolidated financial statements and notes thereto. Accordingly, the readers of the audit report should understand that the above audit report has not been updated to reflect the impact of such subsequent events or circumstances, if any.

Korea Mine Rehabilitation and Mineral Resources Corporation and its subsidiaries
Consolidated statements of financial position
As of December 31, 2022 and December 31, 2021

(Korean won)

	Notes		December 31, 2022		December 31, 2021
Assets					
Current assets					
Cash and cash equivalents	5,6,25,41,42	₩	320,517,489,394	₩	458,170,235,410
Current financial assets, net	7,10,11,41,42		163,315,356,955		133,741,851,086
Trade and other receivables, net	8,41,42		52,790,512,803		38,716,285,573
Inventories, net	12		113,714,181,293		78,433,795,819
Other current assets	13		19,598,898,172		17,718,471,116
Current tax assets			700,452,840		369,521,150
Assets held-for-sale	40		1,911,110,813		5,105,083,869
			672,548,002,270		732,255,244,023
Non-current assets					
Non-current financial assets, net	9,10,41,42		1,338,731,904,594		1,282,440,257,744
Long-term other receivables, net	8,41,42		12,823,899,837		20,864,960,154
Property, plant and equipment, net	16,22,25		579,186,961,210		589,842,846,923
Investment properties	17		20,781,083,194		17,255,723,753
Intangible assets other than goodwill	18,25		43,117,045,358		45,590,153,800
Investments in associates and joint ventures	14		2,260,889,156,276		2,103,405,026,491
Investments in joint operations	15		18,498,505,626		16,620,716,053
Defined benefit asset, net	23		5,374,834,231		-
Deferred tax assets			-		5,950,179,432
Other non-current assets	13		242,955,948,997		231,646,678,923
			4,522,359,339,323		4,313,616,543,273
Total assets		₩	**5,194,907,341,593**	₩	**5,045,871,787,296**
Liabilities					
Current liabilities					
Current trade and other payables	21,22,41,42	₩	118,668,217,242	₩	76,046,096,752
Current financial liabilities	7,19,20,41,42		2,180,078,805,031		1,900,226,253,216
Current provisions	24		9,917,540,480		7,080,807,580
Current tax liabilities			8,893,864,005		29,892,699
Other current liabilities	26		30,921,110,729		12,743,494,679
			2,348,479,537,487		1,996,126,544,926
Non-current liabilities					
Non-current other payables	21,22,41,42		1,395,266,561		1,098,169,854
Non-current financial liabilities	19,20,41,42		4,934,637,154,823		5,053,288,039,764
Other non-current liabilities	27		2,147,303,894		2,135,968,460
Defined benefit liability, net	23		98,927,566		5,846,334,085
Deferred tax liabilities	38		40,191,865,021		106,262,223,674
Non-current provisions	24		122,413,764,926		99,422,128,173
			5,100,884,282,791		5,268,052,864,010
Total liabilities		₩	**7,449,363,820,278**	₩	**7,264,179,408,936**
Equity					
Issued capital	28	₩	2,048,761,200,000	₩	1,999,970,200,000
Discount on stock issuance			(9,716,955,360)		(9,599,856,960)
			2,039,044,244,640		1,990,370,343,040
Accumulated deficits	29				
Voluntary reserves			-		17,253,428,441
Undisposed accumulated deficit			(3,715,959,218,980)		(3,773,556,656,676)
			(3,715,959,218,980)		(3,756,303,228,235)
Other components of equity	30		42,397,977,702		90,474,130,181
Equity attributable to equity holders of the parent			(1,634,516,996,638)		(1,675,458,755,014)
Non-controlling interests			(619,939,482,047)		(542,848,866,626)
Total equity			**(2,254,456,478,685)**		**(2,218,307,621,640)**
Total liabilities and equity		₩	**5,194,907,341,593**	₩	**5,045,871,787,296**

See accompanying notes to the consolidated financial statements.

Korea Mine Rehabilitation and Mineral Resources Corporation and its subsidiaries
Consolidated statements of comprehensive income (loss)
For the year ended December 31, 2022 and the period from September 10 to December 31, 2021

(Korean won)

	Notes	December 31, 2022	December 31, 2021
Sales	25,31	₩ 1,114,569,768,814	₩ 292,421,750,746
Cost of sales	39	(1,035,604,569,724)	(271,371,764,825)
Gross profit		**78,965,199,090**	**21,049,985,921**
Selling and administrative expenses	32,39,41	(166,517,068,547)	(58,403,376,103)
Operating loss		**(87,551,869,457)**	**(37,353,390,182)**
Other income	33	73,124,686	633,535
Other expenses	34	(27,705,653,034)	(5,291,041,452)
Other gains and loss, net	35	7,333,409,218	14,812,396,297
Finance income	36,41	385,233,652,110	92,632,815,161
Finance costs	37,41	(434,456,116,659)	(95,044,652,757)
Gains on investments in associates and joint ventures	14	84,375,682,956	35,389,296,931
Porfit (loss) before tax		**(72,697,770,180)**	**5,146,057,533**
Income tax benefit	38	54,597,869,603	19,676,391,490
Profit (loss) for the period		**₩ (18,099,900,577)**	**₩ 24,822,449,023**
Attributable to:			
Equity holders of the parent		22,305,268,507	33,040,644,289
Non-controlling interests		(40,405,169,084)	(8,218,195,266)
		₩ (18,099,900,577)	₩ 24,822,449,023
Other comprehensive income (loss)			
Other comprehensive income (loss) that will not be reclassified to profit or loss in subsequent periods, net of tax:			
Re-measurement gain (loss) on defined benefit plan		₩ 5,714,606,949	₩ (1,220,092,469)
Share of other comprehensive income of associates and joint ventures		13,312,873,625	4,145,116,761
Other comprehensive income (loss) that may be reclassified to profit or loss in subsequent periods, net of tax:			
Exchange differences on translation of foreign operations		(127,709,400,397)	(34,446,257,394)
Share of other comprehensive income of associates and joint ventures		42,848,800,051	12,925,653,843
Other comprehensive income (loss) for the period		(65,833,119,772)	(18,595,579,259)
Total comprehensive income (loss)		**₩ (83,933,020,349)**	**₩ 6,226,869,764**
Attributable to:			
Equity holders of the parent		(6,842,404,928)	23,930,194,484
Non-controlling interests		(77,090,615,421)	(17,703,324,720)
		₩ (83,933,020,349)	₩ 6,226,869,764

See accompanying notes to the consolidated financial statements.

Korea Mine Rehabilitation and Mineral Resources Corporation and its subsidiaries
Consolidated statements of changes in equity
For the year ended December 31, 2022 and the period from September 10 to December 31, 2021

(Korean won)

	Attributable to equity holders of the parent				
	Issued capital	Accumulated deficits	Other components of equity	Non-controlling interest	Total equity
As of September 10, 2021(comprehensive succession)	**₩ 1,999,970,200,000**	**₩ (3,792,367,898,346)**	**₩ 102,608,605,808**	**₩ (525,145,541,906)**	**₩ (2,214,934,634,444)**
Profit (loss) for the period	-	33,040,644,289	-	(8,218,195,266)	24,822,449,023
Other comprehensive income (loss)	-	2,925,024,292	(12,035,474,097)	(9,485,129,454)	(18,595,579,259)
Other comprehensive income (loss) that will not be reclassified to profit or loss in subsequent periods, net of tax:					
Re-measurement loss on defined benefit plans	-	(1,220,092,469)	-	-	(1,220,092,469)
Share of other comprehensive income of associates and joint joint ventures	-	4,145,116,761	-	-	4,145,116,761
Other comprehensive income (loss) that may be reclassified to profit or loss in subsequent periods, net of tax:					
Share of other comprehensive income of associates and joint joint ventures	-	-	12,925,653,843	-	12,925,653,843
Exchange differences on translation of foreign operations	-	-	(24,961,127,940)	(9,485,129,454)	(34,446,257,394)
Total comprehensive income (loss)	**-**	**35,965,668,581**	**(12,035,474,097)**	**(17,703,324,720)**	**6,226,869,764**
Others	(9,599,856,960)	99,001,530	(99,001,530)	-	(9,599,856,960)
As of December 31, 2021	**₩ 1,990,370,343,040**	**₩ (3,756,303,228,235)**	**₩ 90,474,130,181**	**₩ (542,848,866,626)**	**₩ (2,218,307,621,640)**
As of January 1, 2022	**₩ 1,990,370,343,040**	**₩ (3,756,303,228,235)**	**₩ 90,474,130,181**	**₩ (542,848,866,626)**	**₩ (2,218,307,621,640)**
Profit (loss) for the year	-	22,305,268,507	-	(40,405,169,084)	(18,099,900,577)
Other comprehensive income (loss)	-	19,027,480,574	(48,175,154,009)	(36,685,446,337)	(65,833,119,772)
Other comprehensive income (loss) that will not be reclassified to profit or loss in subsequent periods, net of tax:					
Re-measurement loss on defined benefit plans	-	5,714,606,949	-	-	5,714,606,949
Share of other comprehensive income of associates and joint joint ventures	-	13,312,873,625	-	-	13,312,873,625
Other comprehensive income (loss) that may be reclassified to profit or loss in subsequent periods, net of tax:					
Share of other comprehensive income of associates and joint joint ventures	-	-	42,848,800,051	-	42,848,800,051
Exchange differences on translation of foreign operations	-	-	(91,023,954,060)	(36,685,446,337)	(127,709,400,397)
Total comprehensive income (loss)	**-**	**41,332,749,081**	**(48,175,154,009)**	**(77,090,615,421)**	**(83,933,020,349)**
Issuance of share capital	48,673,901,600	-	-	-	48,673,901,600
Others	-	(988,739,826)	99,001,530	-	(889,738,296)
As of December 31, 2022	**₩ 2,039,044,244,640**	**₩ (3,715,959,218,980)**	**₩ 42,397,977,702**	**₩ (619,939,482,047)**	**₩ (2,254,456,478,685)**

See accompanying notes to the consolidated financial statements.

Korea Mine Rehabilitation and Mineral Resources Corporation and its subsidiaries
Consolidated statements of cash flows
For the year ended December 31, 2022 and the period from September 10 to December 31, 2021(Cont'd)

(Korean won)

		December 31, 2022		December 31, 2021
Operating activities				
Profit (loss) for the period	₩	(18,099,900,577)	₩	24,822,449,023
Adjustments for operating activities for the year to net cash:				
Additional costs on loans		4,859,914,429		2,021,393,686
Provision for inventory allowance		-		(10,133,937,454)
Depreciation		71,893,703,128		23,538,472,739
Depreciation of investment property		749,187,752		216,368,637
Amortization of intangible assets		2,997,760,216		1,058,165,421
Severance and retirement benefits		3,058,216,508		767,038,924
Employee benefits		18,901,781		135,857,683
Bad debt expense		24,230,383,283		6,689,516,303
Income tax benefit		(54,597,869,603)		(19,676,391,490)
Loss on disposal of property, plant and equipment		907,097		-
Loss on disposal of intangible assets		503,360		-
Loss on impairment of investments in joint operations		299,077,309		-
Provision for provision liabilities		4,801,273,910		-
Loss on impairment of intangible assets		1,684,253,686		-
Loss of equity method investments		18,755,442,272		3,874,703,178
Loss on foreign currency translation		165,771,293,216		33,590,276,097
Loss on foreign currency transaction		20,936,786,640		-
Loss on valuation of derivatives		25,996,607,904		3,443,258,635
Loss on disposal of derivatives		92,136,980		-
Interest expenses		213,815,662,945		54,924,679,260
Miscellaneous loss		1,750,710		250,034,654
Reversal of allowance for doubtful accounts		(1,884,499,321)		(37,425,511)
Fair value through profit and loss		(5,300,654,400)		(3,808,285,600)
Gain on disposal of property, plant and equipment		(1,948,071,375)		-
Gain on disposal of other non-current assets		(248,508,074)		(1,327,344,119)
Gain on disposal of financial assets		(45,889,835)		-
Income of equity method investments		(103,430,202,537)		(39,264,000,109)
Gain on foreign currency translation		(238,171,678,181)		(54,342,272,084)
Gain on foreign currency transaction		(12,509,901,107)		(165,772,379)
Gain on valuation of derivatives		-		(620,188,519)
Gain on disposal of derivatives		(1,439,063,681)		-
Interest income		(128,508,210,883)		(36,024,828,791)
		11,879,214,129		(34,890,680,839)

See accompanying notes to the consolidated financial statements.

Korea Mine Rehabilitation and Mineral Resources Corporation and its subsidiaries
Consolidated statements of cash flows
For the year ended December 31, 2022 and the period from September 10 to December 31, 2021(Cont'd)

(Korean won)

	December 31, 2022	December 31, 2021
Changes in operating assets and liabilities:		
Trade receivables	₩ 8,784,963,129	₩ 16,636,047,294
Other receivables	(22,231,026,246)	4,384,324,967
Inventories	(33,019,196,630)	10,581,019,414
Advanced payments	(1,182,132,276)	12,689,837,254
Prepaid expenses	31,948,700	301,195,392
Other current assets	(8,064,200)	-
Other payables	40,122,599,913	3,305,792,015
Accrued expenses	(4,830,675,342)	1,405,300,682
Trade payables	(11,376,260,724)	(12,473,410,773)
Advance receipts	829,771,696	(303,434,648)
Withholdings	9,018,623,971	720,624,383
Provisions for employee benefits	2,863,601,180	1,597,603,610
Provisions for decommissioning cost	(606,871,005)	(228,106,151)
Plan assets	(7,376,654,849)	(912,653,020)
Payment of severance and retirement benefits	(1,089,195,460)	(405,743,220)
Other current liabilities	8,487,655,556	(498,900)
	(11,580,912,587)	37,297,898,299
Interest received	67,747,732,454	26,745,193,555
Interest paid	(161,417,231,282)	(49,986,975,748)
Dividends received	3,837,471,516	-
Income tax paid	(118,193,039)	(360,641,867)
Net cash flows provided by (used in) operating activities	**(107,751,819,386)**	**3,627,242,423**

See accompanying notes to the consolidated financial statements.

Korea Mine Rehabilitation and Mineral Resources Corporation and its subsidiaries
Consolidated statements of cash flows
For the year ended December 31, 2022 and the period from September 10 to December 31, 2021(Cont'd)

(Korean won)

	December 31, 2022	December 31, 2021
Investing activities		
Disposal of other intangible assets	₩ 22,880,000	₩ -
Disposition of assets held-for-sale	3,260,296,130	4,975,624,306
Decrease in short-term financial instruments	26,487,750,481	9,439,311,551
Decrease in long-term financial instruments	231,535,754	188,125,000
Decrease in financial assets measured at amortized cost	51,433,831,603	-
Cash inflow from settlement of derivatives	2,749,994,615	-
Decrease in short-term loans	108,627,920,990	48,009,306,130
Decrease in long-term loans	18,067,721,324	15,775,001,058
Decrease in long-term deposits	3,065,523,831	115,000,000
Decrease in property, plant and equipment	162,813,259	-
Acquisition of land	(491,050,163)	(6,510,745,565)
Acquisition of buildings	(169,545,649)	(2,784,634,949)
Acquisition of structures	(10,072,290)	(1,091,593,453)
Acquisition of machinery	(1,218,943,756)	(4,548,085,751)
Acquisition of vehicles	(864,923,058)	(999,180,275)
Increase in construction in progress	(20,298,068,382)	(8,391,378,818)
Acquisition of other property, plant and equipment	(895,967,841)	(599,590,117)
Acquisition of exploration and evaluation assets	(1,017,306,870)	(499,899,043)
Acquisition of software	(1,042,977,397)	(227,229,160)
Acquisition of other intangible assets	-	(15,115,154)
Increase in intangible assets in devolopment	-	(1,409,810,980)
Increase in long-term loans	(99,058,024,000)	(43,179,025,391)
Increase in short-term financial instruments	(65,686,507,342)	(5,312,390,499)
Increase in investments in joint operations	(2,517,686,253)	(969,049,814)
Cash outflow from settlement of derivatives	(1,590,329,190)	-
Increase in long-term deposits	(786,917,459)	(5,868,598,574)
Net cash flows provided by (used in) investing activities	**18,461,948,337**	**(3,903,959,498)**
Financing activities		
Proceeds from short-term borrowings	100,000,000,000	-
Proceeds from long-term borrowings	676,252,191,790	-
Issuance of bonds	522,008,731,015	-
Issuance of share capital	48,673,901,600	-
Government grant	587,402,200	1,951,285,589
Receipt of rental deposits	-	231,283,000
Repayment of rental deposits	(33,546,500)	(231,283,000)
Repayment of current portion of long-term borrowings	(786,052,323,849)	-
Repayment of current portion of long-term bonds	(614,462,750,000)	-
Repayment of lease liabilities	(851,027,419)	(275,554,532)
Payment of capital registration tax	-	(9,599,856,960)
Net cash flows used in financing activities	**(53,877,421,163)**	**(7,924,125,903)**
Net increase in cash and cash equivalents before effect of foreign exchange difference	**(143,167,292,212)**	**(8,200,842,978)**
Net foreign exchange difference in cash and cash equivalents	**5,514,546,196**	**3,600,198,232**
Net increase in cash and cash equivalents	**(137,652,746,016)**	**(4,600,644,746)**
Cash and cash equivalents at beginning of period	**458,170,235,410**	**462,770,880,156**
Cash and cash equivalents at end of the period	**₩ 320,517,489,394**	**₩ 458,170,235,410**

See accompanying notes to the consolidated financial statements.

1. Corporate information

Korea Mine Rehabilitation and Mineral Resources Corporation (the "Company") or "KOMIR" was incorporated on September 10, 2021 under the *Korea Mine Rehabilitation and Mineral Resources Corporation Act* enacted on March 9, 2021. The Company has comprehensively succeeded all assets, liabilities, and other rights and obligations of those the Korea Resources Corporation and the Mine Reclamation Corporation. The purpose of the establishment of the Company is to contribute to the development of the national economy by appropriately managing mine damage, nurturing and supporting the mineral resource industry, thereby promoting the economic revitalization of the mining areas and stabilize the supply and demand of mineral resources.

The Company's issued capital as of December 31, 2022 amounts to ₩2,048,761,200,000 and the shareholders of the Company and their equity interest are as follows (Korean won):

Shareholders	Issued capital	Equity interest (%)
The Government of the Republic of Korea	₩ 2,046,061,200,000	99.87
Korea Development Bank	2,700,000,000	0.13
	₩ 2,048,761,200,000	100.00

(1) The Company's consolidated subsidiaries as of December 31, 2022 are as follows:

Subsidiary	Equity interest (%)	Major operating activities	Country of domicile
KORES Australia Pty. Ltd. and its subsidiaries	100.00	Mining	Australia
KORES Canada Corp. and its subsidiaries	100.00	Mining	Canada
SARISBURY LIMITED	80.00	Mining	Niger
Prime Asia Resources	100.00	Mining	Singapore
Ermani Ltd.	100.00	Mining	Tanzania
Minera Metalurgica del Boleo(MMB) (*)	77.01	Mining	Mexico
KOMIR Mongolia, LLC	100.00	Mine reclamation management	Mongolia

(*) During 2022, KORES Lux S.a.r.l, an intermediate parent company, was liquidated, and the Company acquired the shares of Minera Metalurgica del Boleo (MMB) owned by KORES Lux S.a.r.l.

(2) Significant financial information of the consolidated subsidiaries as of and for the year ended December 31, 2022 are as follows (Korean won):

Subsidiary	Total assets	Total liabilities	Sales	Profit (loss) before tax	Net profit (loss) for the period
KORES Australia Pty. Ltd. and its subsidiaries	₩ 139,460,407,813	₩ 14,455,119,706	₩ 64,789,188,596	₩ 46,710,015,303	₩ 31,164,922,729
KORES Canada Corp. and its subsidiaries	92,969,631,119	-	-	3,568,377,528	3,568,377,528
Prime Asia Resources	17,873,836,225	117,565,127	-	(58,988,163)	(58,988,163)
Minera Metalurgica del Boleo(MMB)	591,780,119,983	2,441,592,357,220	221,808,517,233	(247,691,535,753)	(247,691,535,753)
KOMIR Mongolia, LLC	1,367,635,918	6,067,538	64,475,037	29,854,188	21,304,187

2. Basis of preparation and accounting policies

2.1 Basis of preparation

The Company and its subsidiaries (collectively referred to as the "Group") maintain the official accounting records in Korean won and prepare statutory financial statements in the Korean language in accordance with Accounting Standards for Korean Government-owned Public Corporation and Quasi-governmental Institutions in the Republic of Korea ("Government Accounting Standards"). In accordance with Paragraph 5 in Article 2 of Government Accounting Standards, Korean International Financing Reporting Standards ("K-IFRS") shall be applied where accounting provisions are not specified in Government Accounting Standards.

(1) Accounting policies applied by the Group that are specified by Government Accounting Standards are as follows:

Government grants (Article 44)
Government grants used for the acquisition of assets are recognized as a deduction from the assets and are recognized in profit or loss over the useful life of the assets as a reduction to depreciation. Government grants received by the Group to fulfil as specific purpose mandated by the government through entrusted operations or specific laws and regulations, or as a compensation for the differences between the price set by the government and the price set by the Company, are recognized in other income.

Among the grants and consignment management services designated by Article 48, the unused amounts can be accounted for as a deduction to the related assets.

Recognition of revenue and expenses related to consignment and management services (Article 48)
The Group recognizes funds received from the government for consignment and management services as revenue and expenses as the associated project progresses, or as assets and liabilities without offsetting them.

Contribution to the Employee Welfare Fund (Article 49)
The Group contributes to the employee welfare fund and contributions are recognized as selling, general and administrative expenses in accordance with the Intra-company Labor Welfare Fund Act.

(2) Other than those mentioned in 2.1(1), the standards in K-IFRS are applied.

2.2 New standards and interpretations not yet effective

The enacted or amended standards and interpretations that have been issued by not yet effective are as follows:

K-IFRS No. 1001 'Presentation of Financial Statements' - Current/non-current classification of liabilities
The amendments clarify that in order for the borrower to have the right to defer payment of liabilities, it must fulfil the conditions of complying with all contractual compliance at the end of the reporting peri od. Additionally, the possibility of the borrower exercising the right to defer settlement of liabilities for more than 12 months after the reporting period does not affect the liquidity classification of liabilities. In addition, when the settlement of liabilities includes the transfer of equity instruments, where compou nd financial instrument has a liability and equity portion separately recognised, it does not affect the cl assification for liquidity purposes. The IASB has published an amendment that postpones the effective date of amendments to no earlier than January 1, 2024, and the Korean Accounting Standards Board plans to revise the K-IFRS accordingly.
K-IFRS No. 1001 'Presentation of Financial Statements' - Disclosure of 'Accounting Policies'
Material accounting policy information must be defined and disclosed. These amendments are effective for annual periods beginning on or after January 1, 2023, with early application permitted. The Group is reviewing the impact of the amendment on its consolidated financial statements.

K-IFRS No. 1008 'Accounting Policies, Changes in Accounting Estimates and Errors' - Definition of 'Accounting Estimates'
The revised standard defines an accounting estimate and clarifies how to distinguish it from a change in accounting policy. These amendments are effective for annual periods beginning on or after January 1, 2023, with early application permitted. The Group expects that the amendment will not have a material impact on the consolidated financial statements.

2.2 New standards and interpretations not yet effective (cont'd)

K-IFRS No. 1012 'Income Tax' - Deferred Income tax on assets and liabilities arising from a single transaction
In addition to the requirements for exceptions to initial recognition for transactions in which assets or liabilities are recognized for the first time, a requirement for transactions that do not generate temporary differences to be added and temporary differences to be deducted at the time of the transaction has been added. These amendments are effective for annual periods beginning on or after January 1, 2023, with early application permitted. The Group expects that the amendment will not have a material impact on the consolidated financial statements.

K-IFRS No. 1117 'Insurance Contract' - Enactment
K-IFRS 1117, 'Insurance Contracts' replaces K-IFRS 1104, 'Insurance Contracts'. All cash flows from insurance contracts must be estimated, insurance liabilities must be measured using a discount rate that reflects assumptions and risks at the time of reporting, and insurance revenues must be accrual-based by reflecting services(insurance coverage) provided to policyholders for each fiscal year. In addition, investment elements (cancellation/maturity refund) paid to policyholders regardless of insurance events are excluded from insurance revenue, and insurance profit and loss and investment profit and loss are separately disclosed so that information users can identify the source of profit and loss. This standard is applied from the first fiscal year starting on or after January 1, 2023, and early application is permitted for companies that have applied K- IFRS 1109, 'Financial Instruments'. The Group anticipates that the amendment will not have a material impact on the consolidated financial statements.

As a result of the revision of the standard, companies that apply K-IFRS 1117 for the first time can apply an optional classification adjustment ('overlay') for the comparison period. This classification adjustment can be applied to all financial assets, including financial assets unrelated to contracts that fall within the scope of K-IFRS 1117. Entities applying classification adjustments to financial assets present comparative information as if they have applied the classification and measurement requirements of K-IFRS 1109 to the relevant financial assets, and these classification adjustments can be applied on a product-by-product basis.

K-IFRS No.1001 'Presentation of financial statements' - Disclosure of valuation gains and losses on financial liabilities with exercise price adjustment conditions
When all or part of a financial instrument subject to the condition that the exercise price is adjusted according to the fluctuation of the issuer's stock price is classified as a financial liability, the carrying amount of the financial liability and related gains and losses are required to be disclosed. These amendments are effective for annual periods beginning on or after January 1, 2023, with early application permitted. The Group anticipates that the amendment will not have a material impact on the consolidated financial statements.

2.3 New and amended standards and interpretations

The Group applied the following standards and amendments for the first time for its reporting period commencing January 1, 2022:

K-IFRS No. 1116 'Lease' - COVID-19-related rent discounts provided after June 30, 2021, etc.
The scope of application of the shortcut, which allows rental discounts, etc. that occurred as a direct result of COVID-19 to not be assessed as a lease change, has been expanded to lease payment reductions affecting lease payments payable before June 30, 2022. The lessee should consistently apply the shortcut to contracts of similar nature in similar circumstances. There is no material impact on the consolidated financial statements from the revision of the standard.

K-IFRS No. 1103 'Business Combination' - Citation of Conceptual Framework
Although the definition of assets and liabilities to be recognized in a business combination has been amended to refer to the revised Conceptual Framework for Financial Reporting, K-IFRS 1037 'Provisions, Contingent Liabilities and Contingent Assets' and Interpretation No. 2121 'Levies' have been amended. For liabilities and contingent liabilities included in the scope of application, an exception was added to apply the standard, and it was clarified that contingent assets are not recognized on the acquisition date. There is no material impact on the consolidated financial statements from the revision of the standard.

K-IFRS No. 1016 "Property, Plant and Equipment' - Proceeds before intended use
It requires that revenue from the sale of an item produced be recognized in profit or loss together with the cost

2.3 New and amended standards and interpretations(cont'd)

of production before the entity uses the asset in its intended manner, and prohibits deduction from the cost of tangible assets. There is no material impact on the consolidated financial statements from the revision of the standard.

K-IFRS No. 1037, 'Provisions, Contingent Liabilities and Contingent Assets' - Onerous Contracts: Cost of fulfilling a contract
When identifying onerous contracts, it is clarified that the scope of contract fulfillment costs is the allocation of incremental costs for contract fulfillment and other costs directly related to contract fulfillment. There is no material impact on the consolidated financial statements from the revision of the standard.

Annual Improvement of K-IFRS 2018-2020
The annual improvement 2018-2020 of the K-IFRS is effective for fiscal years beginning on or after January 1, 2022, and early application is permitted. There is no material impact on the consolidated financial statements from the revision of the standard.

K-IFRS No. 1101, 'First Adoption of International Financial Reporting Standards': Subsidiaries that are first-time adopters
K-IFRS No. 1109 'Financial Instruments': Fee related to 10% test for the purpose of derecognizing financial liabilities
K-IFRS No. 1041 'Agriculture': Fair value measurement

2.4 Significant accounting policies

Significant accounting policies in accordance with K-IFRS applied by the Group in the preparation of its consolidated financial statements are summarized below. The accounting policies set out below have been applied consistently to all periods presented in these financial statements.

The consolidated financial statements have been prepared on a historical cost basis, except for certain non-current assets and financial assets. Historical cost is based on the fair value of the consideration given in exchange for assets.

(1) Basis of consolidation

The consolidated financial statements of the Group include the financial statements of the Company and its subsidiaries (including special-purpose entities) controlled by the Company. Control is achieved where the Company has the power to govern the financial and operating policies of an entity so as to obtain benefits from its activities.

Income and expenses of subsidiaries acquired or disposed of during the period are included in the consolidated statements of profit or loss and other comprehensive income from the effective date of acquisition and up to the effective date of disposal, as appropriate. Total comprehensive income of subsidiaries is attributed to the owners of the Company 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 bring their accounting policies into line with those used in the Group.

All intragroup transactions, balances, income and expenses are eliminated in full upon consolidation.

Changes in the Company's ownership interests in subsidiaries that do not result in the Company losing control over the subsidiaries are accounted for as equity transactions. The carrying amounts of the Company's interests and the non-controlling interests are adjusted to reflect the changes in their relative interests in the subsidiaries. Any difference between the amount by which the non-controlling interests are adjusted and the fair value of the consideration paid or received is recognized directly in equity and attributed to owners of the Company.

When the Company loses control of a subsidiary, the income or loss on disposal is calculated as the difference between (i) the aggregate of the fair value of the consideration received and the fair value of any retained interest and (ii) the previous carrying amount of the assets (including goodwill), and liabilities of the subsidiary and any

2.4 Significant accounting policies(cont'd)

non-controlling interests. When assets of the subsidiary are carried at revalued amounts or fair values and the related cumulative gain or loss has been recognized in other comprehensive income and accumulated in equity, the amounts previously recognized in other comprehensive income and accumulated in equity are accounted for as if the Company had directly disposed the relevant assets (i.e., reclassified to income or loss or transferred directly to retained earnings).

Any interest retained in the former subsidiary is measured at fair value when control is lost.

(2) Investment in associates

An associate is an entity over which the Group has significant influence and that is neither a subsidiary nor an interest in a joint venture. An entity is considered to have significant power when one or more among the followings is applicable:

① Being able to participate in the Board of Directors; meetings or equivalent, ② Being able to participate in the process of making decisions including distribution of dividends or others, ③ Significant transactions exist between the entity and the investee ④ Mutual interchange between managements ⑤ Providing essential technical information.

The results and assets and liabilities of associates are incorporated in these consolidated financial statements using the equity method of accounting, except when the investment is classified as held for sale, in which case it is accounted for in accordance with K-IFRS 1105 *Non-current Assets Held for Sale and Discontinued Operations*. Under the equity method, an investment in an associate is initially recognized in the consolidated statement of financial position at cost and adjusted thereafter to recognize the Group's share of profit or loss and other comprehensive income of the associate. When the Group's share of losses of an associate exceeds the Group's interest in that associate (which includes any long-term interests that, in substance, form part of the Group's net investment in the associate), the Group discontinues recognizing its share of further losses. Additional losses are recognized only to the extent that the Group has incurred legal or constructive obligations or made payments on behalf of the associate.

Any excess of the cost of acquisition over the Group's share of the net fair value of the identifiable assets, liabilities and contingent liabilities of an associate recognized at the date of acquisition is recognized as goodwill, which is included within the carrying amount of the investment. Any excess of the Group's share of the net fair value of the identifiable assets, liabilities and contingent liabilities over the cost of acquisition, after reassessment, is recognized immediately in profit or loss.

The requirements of K-IFRS 1028 *Investments in Associates and Joint Ventures* are applied to determine whether it is necessary to recognize any impairment loss with respect to the Group's investment in an associate. When necessary, the entire carrying amount of the investment (including goodwill) is tested for impairment in accordance with K-IFRS 1036 *Impairment of Assets* as a single asset by comparing its recoverable amount (higher of value in use and fair value less costs to sell) with its carrying amount, any impairment loss recognized forms part of the carrying amount of the investment. An impairment loss recognized is not allocated to any asset, including goodwill, that forms part of the carrying amount of the net investment in the associate. Any reversal of that impairment loss is recognized in accordance with K-IFRS 1036 to the extent that the recoverable amount of the investment subsequently increases.

When the Group transacts with its associate, incomes and losses resulting from the transactions with the associate are recognized in the Group's consolidated financial statements only to the extent of interests in the associate that are not related to the Group.

(3) Non-current Assets Held for Sale and Discontinued Operations

Non-current assets, or disposal groups comprising assets and liabilities, that are expected to be recovered primarily through sale rather than through continuing use, are classified as held for sale. In order to be classified as held for sale, the asset (or disposal group) must be available for immediate sale in its present condition and its sale must be highly probable. Management must be committed to a plan to sell the asset (or disposal group), the sale should be expected to qualify for recognition as a completed sale within one year from the date of classification. The Group that is committed to a sale plan involving loss of control of a subsidiary shall classify

2.4 Significant accounting policies (cont'd)

all the assets and liabilities of that subsidiary as held for sale when the criteria stated are met, regardless of whether the entity will retain a non-controlling interest in its former subsidiary after the sale. The assets or disposal group that are classified as non-current assets held for sale are measured at the lower of their carrying amount and fair value less cost to sell.

(4) Foreign currencies

Items included in the consolidated financial statements of each of the Group's entities are measured using the currency of the primary economic environment in which the entity operates (the 'functional currency'). It is necessary for the results and financial position of each individual entity included in the reporting entity to be translated into the currency, Korean won, in which the reporting entity presents its financial statements.

Transactions in foreign currencies are initially recorded by the Group's entities at their respective functional currency spot rates at the date the transaction first qualifies for recognition. Monetary assets and liabilities denominated in foreign currencies are retranslated at the functional currency spot rates of exchange 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 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.
Assets and liabilities for each statement of financial position presented (i.e. including comparatives) were translated at the closing rate at the date of that statement of financial position, income and expenses for each statement presenting profit or loss and other comprehensive income (i.e. including comparatives) were translated at the average exchange rates of the period and all resulting exchange differences were recognized in other comprehensive income.

On the disposal of a foreign operation, (in addition to the disposal of an entity's entire interest in a foreign operation, the following partial disposals are accounted for as disposals; when the partial disposal involves the loss of control of a subsidiary that includes a foreign operation, regardless of whether the entity retains a non-controlling interest in its former subsidiary after the partial disposal, and when the retained interest after the partial disposal of an interest in a joint arrangement or a partial disposal of an interest in an associate that includes a foreign operation is a financial asset that includes a foreign operation), the cumulative amount of the exchange differences relating to that foreign operation, recognized in other comprehensive income and accumulated in the separate component of equity, shall be reclassified from equity to profit or loss (as a reclassification adjustment) when the gain or loss on disposal is recognized. On disposal of a subsidiary that includes a foreign operation, the cumulative amount of the exchange differences relating to that foreign operation that have been attributed to the non-controlling interests shall be de-recognized, but shall not be reclassified to profit or loss.

(5) Property, plant and equipment

Property, plant and equipment are initially measured at cost and after initial recognition, are carried at cost less accumulated depreciation and accumulated impairment losses.

The cost or property, plant and equipment includes expenditures arising directly from the construction or acquisition of the asset, any costs directly attributable to brining the asset to the location and condition necessary for it to be capable of operating in the manner intended by management and the initial estimate of the costs of dismantling and removing the item and restoring the site on which it is located.

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

2.4 Significant accounting policies (cont'd)

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

	Useful life
Buildings	20 - 40
Structures	20
Machinery	5 - 10
Vehicles	7
Others	5 - 10

Each part of an item of property, plant and equipment with a cost that is significant in relation to the total cost of the item shall be depreciated separately.

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

Property, plant and equipment are derecognized on disposal, or when no future economic benefits are expected from its use or disposal. Gains or losses arising from de-recognition of a property, plant and equipment, measured as the difference between the net disposal proceeds and the carrying amount of the asset, are recognized in income or loss when the asset is derecognized.

(6) Investment properties

The real estate to obtain rental income or capital appreciation are classified as investment properties. Investment properties are measured initially at cost, including transaction costs. Subsequent to initial recognition, investment properties are stated at cost, net of accumulated depreciation and accumulated impairment losses.

Subsequent costs are recognized in carrying amount of an asset or as an asset if it is probable that future economic benefits associated with the assets will flow into the Group and the cost of an asset can be measured reliably. A carrying amount of an asset replaced by subsequent costs are derecognized. Routine maintenance and repairs are expensed as incurred. Investment properties consist of land which are not depreciated. Investment properties except land, are depreciated using a straight-line method during 40 years of useful life.

Investment properties are derecognized upon disposal or when no future economic benefits are expected from its use or disposal. Any gain or loss arising on de-recognition of the asset is recognized in profit or loss in the period.

(7) Intangible assets

Intangible assets acquired separately
Intangible assets with a finite useful life that are acquired separately are carried at cost less accumulated amortization and accumulated impairment losses. Amortization is recognized on a straight-line basis over their estimated useful life. The estimated useful life and amortization method are reviewed at the end of each reporting period, with the effect of any changes in estimate being accounted for on a prospective basis. Intangible assets with an indefinite useful life that are acquired separately are carried at cost less accumulated impairment losses. Intangible assets are amortized over the estimated useful life using the methods as follows:

	Useful life	Amortization methods
Software	10 years	Straight-line method
Industrial proprietary rights	5 years	Straight-line method
Mining right	Unit of Production	Unit of production method

2.4 Significant accounting policies (cont'd)

Derecognition of intangible assets
An intangible asset is derecognized on disposal, or when no future economic benefits are expected from its use or disposal. Gains or losses arising from de-recognition of an intangible asset, measured as the difference between the net disposal proceeds and the carrying amount of the asset, are recognized in income or loss when the asset is derecognized.

(8) Leases

The Group classifies and accounts for leases as either a finance or operating lease, depending on the terms. In accordance with the amendment of the standard, lessee applies a single lease model and recognizes assets and liabilities for all lease which lease term is over 12 months and underlying assets are not low value assets. For a contract that is, or contains, a lease, the Group shall account for each lease component within the contract as a lease separately from non-lease components of the contract. As a practical expedient, the Group as a lessee elect not to separate non-lease components form lease components, and instead account for each lease component and any associated non-lease components as a single lease component.

Group as a lessor

A lease in which the risks and rewards of ownership of the underlying asset are transferred to the Group is classified as a finance lease, and leases in which the risks and rewards of ownership of the underlying asset are not transferred to the Group are classified as an operating lease.

Group provided its investment property as a lease and classified as an operating lease. Group recognized lease payments from operating leases as income on a straight-line basis, added initial direct costs incurred in negotiating and arranging an operating lease to the carrying amount of the underlying asset and recognized those costs as an expense over the lease term on the same basis as the lease income.

Group as a lessee

Group applied a single recognition and measurement method for all leases except short-term leases or leases for which the underlying asset is of low value. Accordingly, the Group recognized a right-of-use asset and a lease liability.

- Right-of-use asset
The Group recognizes the right-of-use asset at the commencement of the lease. Right-of-use assets are measured at cost, deduct accumulated depreciation and accumulated impairment losses, and adjusted if remeasurement of lease liabilities occurs. The cost of the right-of-use asset includes the amount of the recognition of the lease liability and the amount of the initial direct cost, and the lease advance payment or incentive paid before the commencement of the lease payments. If the Group is not reasonably expected to obtain ownership of the leased asset at the end of the lease term, the right-of-use asset is depreciated on a straight-line basis over the shorter period of the estimated useful life and lease term. The Group performs an impairment review of the right-of-use asset.

- Lease liability
The Group measures the lease liability at the present value of the lease payments it has not paid at the commencement of the lease. Lease payments include fixed lease payments (including actual fixed lease fees), variable lease payments that depend on the index or rate, and the amount expected to be paid by the Group under the residual value guarantee, except for lease incentives to be received. In addition, if the Group is reasonably certain to exercise the option, the lease payments and lease term of the option reflect the Group's exercise of the option to terminate the lease, the amount paid to terminate the lease is included in the lease fee. Variable lease payments, which do not depend on the index or rate, are recognized as expenses in the period in which the lease payments occur.

2.4 Significant accounting policies (cont'd)

When calculating the present value of the lease payments, the Group uses the incremental borrowing rate at the inception of the lease if it cannot calculate the interest rate implicit in a lease. The Group increases the carrying amount of the lease liability by reflecting interest on the lease liability at the commencement of the lease, and reduces the carrying amount of the lease liability by reflecting the lease payment paid. The Group also remeasures the lease liability to reflect changes in leases, to reflect actual changes in fixed lease payments, to reflect changes in lease terms, or to assess the underlying asset purchase option.

- Short-term leases and leases of low-value assets
The Group applies the recognition exemption for short-term leases. In addition, the recognition exemption is applied to as leases for low-value office equipment. Lease payments for short-term and low-value leases are recognized as expenses on a straight-line basis over the lease term. Note 23 describes the carrying amount of the right-of-use assets and lease liabilities and the amount of changes during the reporting period.

(9) Inventories

Inventories are stated at the lower of cost and net realizable value. Cost of inventories, except for those in transit, is measured under the weighted average method and consists of the purchase price, cost of conversion and other costs incurred in bringing the inventories to their present location and condition. Net realizable value represents the estimated selling price for inventories less all estimated costs of completion and costs necessary to make the sale.

The carrying amount of inventories sold in the period and the amount of any write-down of inventories to net realizable value and all losses of inventories in the period; less the amount of any reversal in the period of any write-down of the inventories, arising from an increase in net realizable value, are recognized as an expense during the period. When there is an increase in net realizable value, the amount of the write-down is reversed and deducted from cost of sales.

(10) Impairment of non-financial assets

The Group assesses at the end of each reporting period whether there is any indication of an impairment loss for an asset, if any such indication exists or an annual impairment test is required, the Group estimates the recoverable amount of that asset for the measurement of an impairment loss. The Group estimated the recoverable amount for the individual asset, if it is not possible to estimate the recoverable amount of the individual asset, the Group determined the recoverable amount of the cash-generating unit to which the asset belongs(the asset's cash-generating unit). The corporate assets are allocated on a reasonable and consistent basis to the individual cash- generating units, if cannot be allocated to the individual cash-generating units, the Group allocates the corporate asset on a reasonable and consistent basis to the smallest group of cash-generating units. The Group performs the impairment test for an intangible asset with an indefinite useful life or an intangible asset not yet available for use annually irrespective of whether there is any indication of impairment. The recoverable amount is defined as the higher of an asset's or cash-generating unit's net fair value(fair value less costs of disposal) and its value in use. If, and only if, the recoverable amount of an asset (or cash-generating unit) is less than its carrying amount, the carrying amount of the asset (or cash-generating unit) is reduced to tis recoverable amount. That reduction is recognized immediately in profit or loss.

When reversing the impairment loss in prior periods, the carrying amount of an asset shall be lower of the modified recoverable amount and the carrying amount that would have been determined had no impairment loss been recognized for the asset in prior periods. Reversed amount should be accounted as profit or loss immediately.

2.4 Significant accounting policies (cont'd)

(11) Financial assets

1) Classification

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

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

The classification depends on the Group's business model for managing the financial assets and the contractual terms of the cash flows.

For financial assets measured at fair value, gains and losses will either be recorded in profit or loss or other comprehensive income. For investments in debt instruments, this will depend on the business model in which the investment is held. The Group reclassified debt investments when, and only when its business model for managing those assets changes.

For investments in equity instruments that are not held for trading, this will depend on whether the Group has made an irrevocable election at the time of initial recognition to account for the equity investment at fair value through other comprehensive income.

2) Measurement

At initial recognition, the Group measures a financial asset at its fair value plus, in the case of a financial asset not at fair value through profit or loss, transaction costs that are directly attributable to the acquisition of the financial asset. Transaction costs of financial assets carried at fair value through profit or loss are expensed in profit or loss.

Financial assets with embedded derivatives are considered in their entirety when determining whether their cash flows are solely payment of principal and interest.

A. Debt instruments

Subsequent measurement of debt instruments depends on the Group's business model for managing the asset and the cash flow characteristics of the asset. The Group classifies its debt instruments into one of the following three measurement categories:

- **Amortized cost:** Assets that are held for collection of contractual cash flows where those cash flows represent solely payments of principal and interest are measured at amortized cost. A gain or loss on a debt investment that is subsequently measured at amortized cost and is not part of a hedging relationship is recognized in profit or loss when the asset is derecognized or impaired. Interest income from these financial assets is included in 'finance income' using the effective interest rate method.
- **Fair value through other comprehensive income :** Assets that are held for collection of contractual cash flows and for selling the financial assets, where the assets' cash flows represent solely payments of principal and interest, are measured at fair value through other comprehensive income. Movements in the carrying amount are taken through other comprehensive income, except for the recognition of impairment loss (reversal of impairment loss), interest income and foreign exchange gains and losses which are recognized in profit or loss. When the financial asset is derecognized, the cumulative gain or loss previously recognized in other comprehensive income is reclassified from equity to profit or loss.
- **Fair value through profit or loss** : Assets that do not meet the criteria for amortized cost or fair value through other comprehensive income are measured at fair value through profit or loss. A gain or loss on a debt investment that is subsequently measured at fair value through profit or loss and is not part of a hedging relationship is recognized in profit or loss and presented net in the statement of profit or loss within 'finance income or cost' in the year in which it arises.

2.4 Significant accounting policies (cont'd)

B. Equity instruments

The Group subsequently measures all equity investments at fair value. Where the Group's management has elected to present fair value gains and losses on equity investments, which held for long-term investment or strategic purpose, in other comprehensive income, there is no subsequent reclassification of fair value gains and losses to profit or loss following the de-recognition of the investment. Dividend income from such investments continue to be recognized in profit or loss as 'finance income' when the right to receive payments is established.

Changes in the fair value of financial assets at fair value through profit or loss are recognized in 'finance income or cost' in the statement of profit or loss as applicable. Impairment loss (reversal of impairment loss) on equity investments measured at fair value through other comprehensive income are not reported separately from other changes in fair value.

3) Impairment

In respect of the impairment of financial assets, the Group accounts for expected credit losses at each reporting date, and changes in those expected credit losses to reflect changes in credit risk since initial recognition. That is, it is not necessary for a credit event to have occurred before credit losses are recognized. The Group shall recognize expected credit losses as an allowance for bad debts on under K-IFRS 1109.

4) De-recognition

The Group derecognizes a financial asset only when the contractual rights to the cash flows from the asset expire or when it transfers the financial asset and substantially all the risks and rewards of ownership of the asset to another entity. If the Group neither transfers nor retains substantially all the risks and rewards of ownership and continues to control the transferred asset, the Group recognizes its retained interest in the asset and an associated liability for amounts it may have to pay. If the Group retains substantially all the risks and rewards of ownership of a transferred financial asset, the Group continues to recognize the financial asset and also recognizes a collateralized borrowing for the proceeds received.

(12) Financial liabilities and equity instruments

1) Liability and equity classification

Debt instruments and equity instruments are classified to a financial asset or an equity according to the substance of a contract.

2) Equity instruments

Equity instruments included all contracts that represents a residual interest (the Group's any asset less any liability). The Group recognizes the equity instruments as net amount that the issued price less the transaction costs that are directly attributable.

3) Finance liabilities

The Group classifies financial liabilities into financial liabilities at fair value through profit or loss or other financial liabilities.

2.4 Significant accounting policies (cont'd)

4) Financial guarantee contracts

Financial guarantee liabilities shall be initially measured at fair value, an issuer of such a contract shall subsequently measure it at the higher of;

- The amount of the loss allowance determined in accordance with the impairment requirements
- The amount initially recognized less, when appropriate, the cumulative amount of income recognized in accordance with the principle of K-IFRS 1115 'Revenue from Contracts with Customers'.

5) De-recognition of financial liabilities

The Group derecognizes a financial liability from the consolidated statement of financial position when it is extinguished (i.e. when the obligation specified in the contract is discharged, cancelled or expires). The difference between carrying amount and consideration paid is recognized through profit or loss when derecognizing a financial liability.

(13) Provisions

Provisions are recognized when the Group has a present obligation (legal or constructive) as a result of a past event; it is probable that the Group will be required to settle the obligation, and a reliable estimate can be made of the amount of the obligation.

The amount recognized as a provision is the best estimate of the consideration required to settle the present obligation at the end of the reporting period, taking into account the risks and uncertainties surrounding the obligation. When a provision is measured using the cash flows estimated to settle the present obligation, its carrying amount is the present value of those cash flows (where the effect of the time value of money is material).

Provisions for estimated future costs are discounted using a pre-tax rate that reflects the current market assessment of the time value of money and the risks specific to the liability. Increase in the provision due to the passage is recognized in profit or loss as finance cost.

When some or all of the economic benefits required to settle a provision are expected to be recovered from a third party, a receivable is recognized as an asset if it is virtually certain that reimbursement will be received and the amount of the receivable can be measured reliably.

At the end of each reporting period, the remaining provision balance is reviewed and assessed to determine if the current best estimate is being recognized. If the existence of an obligation to transfer economic benefit is no longer probable, the related provision is reversed during the period.

A. Guarantee of performance obligation related to "Forest recovery deposit"

The present obligation under the guarantee agreement is recognized and measured as provision, as follows.

To use land for mining purposes, a mining operator must obtain a permit from the land use permit agency for the land (terrain) under the Management of Mountainous Districts Act and National Land Planning and Utilization Act. During this process, the permit agency requires the mining operator to pay a land restoration deposit ("Forest recovery deposit") for the restoration of any land (terrain) that may be damaged by the mining operator during the mining process.

2.4 Significant accounting policies (cont'd)

In relation to the payment of the "Forest recovery deposit" by mining operators, based on the Notice dated August 23, 2006 issued by Ministry of Trade, Industry and Energy, 30%–60% of the payment can be made in installments over an extended period of time. The Group provides a guarantee for these installment payments under the Law on Mine Reclamation and Damage Prevention, Article 39, clause 1, Article 5 and notice by Ministry of Trade, Industry and Energy.

The Group reliably estimates expenses and provides provision for a guarantee of performance obligation for post-process, restoration, and cleanup costs for mining sites where an accident within the guarantee scope has occurred or is likely to occur. The Group recognizes a non-current provision based on the estimates. In addition, at the end of the reporting period, the Group also sets aside reserves to settle the provision in future.

B. Employment benefit

The Ministry of Strategy and Finance carries out institutional evaluation based on the annual performance of the Company. Based on the result, incentives are paid. Performance bonuses are based on reasonable estimates made in accordance with K-IFRS 1037 and are presented as employee benefit provision.

(14) Derivative financial instruments

The Group entered into a variety of derivative financial instruments to manage its exposure to interest rate and foreign exchange rate risk, including foreign exchange forward contracts, interest swap and currency swap. Derivatives are initially recognized at fair value at the date the derivative contract is entered into and are subsequently re-measured to their fair value at the end of each reporting period. The resulting gain or loss is recognized in profit or loss immediately, unless the derivative is designated and effective as a hedging instrument, in which case, the timing of the recognition in profit or loss depends on the nature of the hedge relationship. Derivatives are carried as financial assets when the fair value is positive and as financial liabilities when the fair value is negative. Derivatives are classified non-current assets or liabilities, when the remaining maturities were longer than twelve months, or when they were due not to be settled within twelve months. Other derivatives were presented as current assets or liabilities.

1) Hedge accounting

There are three types of hedging accounting in the hedge accounting model(fair value hedge, cash flow hedge, hedge of a net investment in a foreign operation). But the more flexibility was introduced to the eligible types of the hedging accounting, and enlarge the type of the eligible hedging instruments and the risk factors of the non-financial item.

2) Fair value hedge

Changes in the fair value of a derivative hedging instrument designated as a fair value hedge are recognized in profit or loss. The gain or loss from re-measuring the hedging instrument at fair value for a derivative hedging instrument and the gain or loss on the hedged item attributable to the hedged risk are recognized in profit or loss in the same line item of the consolidated statement of comprehensive income. However, the Group elected to present the changes in the fair value as other comprehensive income at the date of initial recognition, the gain or loss from re-measuring the hedging instrument at fair value for a derivative hedging instrument and the gain or loss on the hedged item attributable to the hedged risk are recognized in other comprehensive income.

The Group discontinues fair value hedge accounting if the hedging instrument expires or is sold, terminated or exercised or even after considering re-adjustments, or if the hedge no longer meets the criteria for hedge accounting. Any adjustment arising from gain or loss on the hedged item attributable to the hedged risk is amortized to profit or loss from the date the hedge accounting is discontinued. If the hedge relationship no longer meets the requirements for hedge effectiveness related to the hedge ratio, but the objectives of risk management for the designated hedge relationship remain the same, the hedging ratio of the hedge relationship should be adjusted ('re-adjustments').

2.4 Significant accounting policies (cont'd)

(15) Revenue

Under the standard, K-IFRS 1115, the Group recognizes revenue base on the five-step approach (Step 1: Identify the contract(s) with a customer, Step 2: Identify the performance obligations in the contract, Step 3: Determine the transaction price, Step 4: Allocate the transaction price to the performance obligations in the contract, Step 5: Recognize revenue when the entity satisfied a performance obligation) is applied for all types of contracts or agreements. Revenue is measured based on the consideration defined by the contracts with customers, and the amount collected as an agent of a third party is excluded. In addition, the Group recognizes revenue when the control over the goods or service is transferred to the customer.

(16) Pension benefits

Contributions to defined contribution plans are expensed as incurred, which is when the employees render service.

For defined benefit plans and other post-employment benefits, the net periodic pension expense is actuarially determined on an annual basis by independent actuaries using the projected unit credit method. The present value of the defined benefit obligation is determined by discounting the estimated future cash outflows using interest rates of high-quality corporate bonds that are denominated in the currency in which the benefits will be paid and that have terms to maturity approximating the terms of the related pension liability.

All actuarial gains and losses that arise in calculating the present value of the defined benefit obligation and the fair value of plan assets are recognized immediately in retained earnings and included in the statement of comprehensive loss. The vested portion of past service cost arising from plan amendments is recognized immediately in profit and loss. The unvested portion is amortized on a straight-line basis over the average remaining period until the benefits become vested.

The asset or liability recognized in the consolidated statement of financial position is the present value of the defined benefit obligation at the end of the reporting period less the fair value of plan assets, together with adjustments for unrecognized past service costs. Any asset resulting from this calculation is limited to unrecognized actuarial losses and past service cost, plus the present value of available refunds and reductions in future contributions to the plan.

(17) Income taxes

Current income tax
Current tax is computed in respect of the taxable profit for a period. The taxable profit is different from the accounting profit for the period since the taxable profit is calculated excluding the temporary differences, which will be taxable or deductible in determining taxable profit of future periods, and non-taxable or non-deductible items from the accounting profit. Current tax liabilities for the current and prior periods shall be measured at the amount expected to be paid to the taxation authorities, using the tax rates and tax laws that have been enacted or substantively enacted by the end of the reporting period.

Deferred tax
Deferred tax is recognized for the temporary differences between the tax bases of assets and liabilities and their carrying amounts for financial reporting purposes at the reporting date. Deferred tax liabilities are usually recognized for all taxable temporary differences. Deferred tax assets are usually recognized 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. However, the Group does not recognize deferred tax liabilities when arising from the initial recognition of goodwill or 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. And the Group does not recognize deferred tax assets when relating to the deductible temporary difference arises from the initial recognition of an asset of 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.

2.4 Significant accounting policies (cont'd)

The Group recognizes a deferred tax liability for all taxable temporary differences associated with investments in subsidiaries, associates, and interests in joint ventures, except to the extent that the Group is able to control the timing of the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. In addition, the Group recognizes a deferred tax asset for all deductible temporary differences to the extent that it is probable that the temporary difference will reverse in the foreseeable future and taxable profit will be available against which the temporary difference 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.

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. The measurement of deferred tax assets and deferred tax liabilities reflects the tax consequences that would follow from the manner in which the Group expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities. The Group offsets deferred tax assets and deferred tax liabilities if and only if it has a legally enforceable right to set off current tax assets and current tax liabilities and the deferred tax assets and deferred tax liabilities relate to income taxes levied by the same taxation authority on either the same taxable entity or different taxable entities which intend either to settle current tax liabilities and assets on a net basis, or to realize the assets and settle the liabilities simultaneously, in each future period in which significant amounts of deferred tax liabilities or assets are expected to be settled or recovered.

Recognition of current and deferred tax

Current and deferred tax shall be recognized as income or an expense and included in profit or loss for the extent that the tax arises from a transaction or event which is recognized, in the same or a different period, outside profit or loss, either in other comprehensive income or directly in equity and a business combination.

(16) Exploration and evaluation assets

The Group is engaged in exploration projects for mineral resources through subsidiaries, associates and joint ventures or other contractual arrangements. Expenditures for topographical studies, geological studies, geochemical studies, geophysical studies and drilling related to the development of mineral resources are recognized as exploration and evaluation assets. These assets are reclassified as development assets of project subsidiaries or associates and joint ventures when it is proved that the exploration has identified commercially viable mineral deposits.

(17) Minerals held in reserve

The Group stockpiles mineral resources, including rare metals, to stabilize domestic demand and market prices. These assets are classified mineral resource stockpiles (non-current non-financial assets), and their cost is determined using the moving-average method.

3. Significant accounting judgments, estimates and assumptions

The Group makes assumptions and estimates concerning the future. Assumptions and estimations are verified continuously based on the past experience and reasonably expected future event. This accounting estimation, however, could be different from actual results. Assumptions and estimations for significant risks which may cause adjustments to the carrying amounts of assets and liabilities are as follows:

3. Significant accounting judgments, estimates and assumptions (cont'd)

3.1 Uncertainty of COVID-19

Since the outbreak of COVID-19 pandemic, governments around the globe have implemented measures such as mandatory factory shutdown, self-quarantine, closing borders, and travel bans. The ultimate impact of COVID-19 pandemic on the Group's operations is not yet known and will depend on future developments. The duration and significance of COVID-19 is highly uncertain and unpredictable, and the protective measures of the governments around the globe or the Group may lead to substantial business interruption and decrease in business scale. The financial impact of this cannot be reasonably estimated, but management expect most areas where the Group operates to be impacted to certain extent. The extent and duration of COVID-19's impact on the Group's business have not yet to be determined.

3.2 Income taxes

The Group carries on businesses in variety of countries and income tax expense coming from operating activities is calculated by the relevant tax laws of different jurisdictions. Accordingly, there are uncertainties in determining the final tax effect on taxable income. The Group recognized expected corporate tax effect as current corporate tax expense and deferred corporate taxes using the best estimation. Actual corporate tax levied, however, may not be consistent with related assets or liabilities, which may cause changes in assets or liabilities at the time when the tax effect is confirmed.

3.3 Fair value of financial instruments

The fair value of financial instruments which are not traded in an active market is principally decided using valuation method. The Group selects various valuation methods and makes judgments about assumptions based on key market circumstances as of December 31, 2022.

3.4 Provision

The Group recognizes provision for employee performance bonus as a result of the assessment in accordance with guidelines from the Ministry of Strategy and Finance (see Note 2.4.(13)).

3.5 Pension benefits

The present value of the defined benefit pension can be changed depending on various factors determined using actuarial valuations. Assumptions to determine pension cost (profit) include the use of discount rates, where changes in assumptions will lead to changes in the present value of the defined benefit pension. The Group determines a discount rate every year end, which is the interest rate used to decide the present value of expected future cash outflows. The Group determines the discount rate using the interest rate of outstanding corporate bonds with similar maturity profiles with the pension obligation. Other assumptions related with the pension obligation are based on market circumstances (see Note 23).

3.6 Management's judgements

Information about management's judgements made in applying accounting policies that have the most significant effects on the amounts recognized in the consolidated financial statements is included in the following notes.

- Note 14 : Investments in associates and joint ventures
- Note 15 : Investments in joint operations

3. Significant accounting judgments, estimates and assumptions (cont'd)

3.7 Assumptions and estimation uncertainties

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

- Note 14 : Investments in associates and joint ventures
- Note 15 : Investments in joint operations
- Note 24 : Provisions
- Note 38 : Income tax
- Note 48 : Material uncertainty of going concern

4. Operating segment information

The Group operates separate accounts for its own and overseas assets, in accordance with the *Korea Mine Rehabilitation and Mineral Resources Corporation Act.*

The summary of the Group's financial information by reportable segment as of December 31, 2022 and 2021 and for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

	2022		
	Own assets account	Overseas assets account	Total
Total segment sales	₩ 268,266,894,133	₩ 846,302,874,681	₩ 1,114,569,768,814
Sales from external customers	268,266,894,133	846,302,874,681	1,114,569,768,814
Depreciation	8,891,702,482	63,002,000,646	71,893,703,128
Amortization	1,910,278,913	1,087,481,303	2,997,760,216
Operating loss	(37,146,049,531)	(50,405,819,926)	(87,551,869,457)
Total segment assets	2,383,271,025,511	2,811,636,316,082	5,194,907,341,593
Investments in associates and joint ventures	1,308,910,183,231	951,978,973,045	2,260,889,156,276
Total segment liabilities	105,707,316,267	7,343,656,504,011	7,449,363,820,278

	2021		
	Own assets account	Overseas assets account	Total
Total segment sales	₩ 87,941,307,011	₩ 204,480,443,735	₩ 292,421,750,746
Sales from external customers	87,941,307,011	204,480,443,735	292,421,750,746
Depreciation	3,491,175,646	20,263,665,730	23,754,841,376
Amortization	733,655,044	324,510,377	1,058,165,421
Operating loss	(8,074,402,854)	(29,278,987,328)	(37,353,390,182)
Total segment assets	2,299,741,589,934	2,746,130,197,362	5,045,871,787,296
Investments in associates and joint ventures	1,247,955,650,235	855,449,376,256	2,103,405,026,491
Total segment liabilities	173,351,728,783	7,090,827,680,153	7,264,179,408,936

Details of geographic information for sales for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

	2022		
	Own assets account	Overseas assets account	Total
Korea	₩ 268,202,419,096	₩ 559,705,168,852	₩ 827,907,587,948
Australia	-	64,789,188,596	64,789,188,596
Luxembourg	-	221,808,517,233	221,808,517,233
Mongolia	64,475,037	-	64,475,037
	268,266,894,133	846,302,874,681	1,114,569,768,814

	2021		
	Own assets account	Overseas assets account	Total
Korea	₩ 87,941,307,011	₩ 132,230,123,487	₩ 220,171,430,498
Australia	-	6,708,957,775	6,708,957,775
Luxembourg	-	65,541,362,473	65,541,362,473
	87,941,307,011	204,480,443,735	292,421,750,746

4. Operating segment information(cont'd)

Details of customers whose sales represent 10% or more of the Group's total sales for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

	2022					
	Own assets account		Overseas assets account		Total	
STX Japan Corporation	₩	-	₩	230,583,342,937	₩	230,583,342,937
POSCO INTERNATIONAL		-		195,538,366,772		195,538,366,772
Korea Energy Agency		119,178,155,846		-		119,178,155,846
STX Corporation		-		127,084,174,292		127,084,174,292
		119,178,155,846		553,205,884,001		672,384,039,847

	2021					
	Own assets account		Overseas assets account		Total	
STX Japan Corporation	₩	-	₩	69,520,056,735	₩	69,520,056,735
POSCO INTERNATIONAL		-		57,585,683,631		57,585,683,631
		-		127,105,740,366		127,105,740,366

5. Cash and cash equivalents

Cash and cash equivalents presented in the consolidated statement of cash flows includes cash on hand, bank deposits but excludes bank overdrafts. Cash and cash equivalents on the consolidated statements of financial position as of December 31, 2022 and 2021 are as follows (Korean won):

		2022		2021
Cash and cash equivalents	₩	322,909,098,685	₩	460,508,823,322
(-)Government grants		-		(78,990)
(-)Entrusted business funds		(2,391,609,291)		(2,338,508,922)
	₩	320,517,489,394	₩	458,170,235,410

6. Restricted cash and cash equivalents

As of December 31, 2022 and 2021, the Group's restricted cash and cash equivalents and material assets pledged as collateral for borrowings and contingent liabilities are as follows (Korean Won):

			2022		2021
Cash and cash equivalents(*1)	Use designation in relation to trusting task	₩	2,391,609,291	₩	2,338,508,922
	Use designation in relation to joint cost		-		78,990
		₩	2,391,609,291	₩	2,338,587,912

(*1) As of December 31, 2022 and 2021, the use has been restricted to the entrusted tasks of the Korea International Cooperation Agency, etc.

7. Derivatives

Details of derivatives as of December 31, 2022 and 2021 are as follows (Korean won):

	2022		2021	
Derivative liabilities:				
Currency and interest rate swaps	₩	34,761,401,746	₩	8,764,793,842

Details of currency and interest rate swaps as of December 31, 2022 are as follows (Korean won):

	Counterpart	Contract period	Amount	Contract interest rate: Sell	Contract interest rate: Purchase
Held for trading	Hana Financial Investment	2020-02-14~2040-02-26	AUD 60,000,000	USD 40,320,000, 2.42%(in 5years), 6M LIBOR+1.18%(afterwards)	AUD 60,000,000 (3.01%)
Held for trading	Hana Financial Investment	2020-07-06~2040-07-13	USD 60,000,000	1.95%(in 5years), 6M LIBOR+2.35%(afterwards)	Fixed interest rate 3.20%
Held for trading	HSBC	2020-03-02~2025-03-07	HKD 500,000,000	USD 64,246,707.36 (2.03%)	HKD 500,000,000 (2.09%)
Held for trading	Hana Bank	2022-11-01~2025-10-31	KRW 100,000,000,000	Fixed interest rate 5.40%	3M CD + 1.12%
Held for trading	Hana Bank	2022-11-14~2025-11-14	KRW 100,000,000,000	Fixed interest rate 5.17%	3M CD + 1.25%

Details of gain (loss) on derivative transactions for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

	Gain (loss) on valuation				Gain (loss) on settlement			
	2022		2021		2022		2021	
Currency swaps	₩	(11,320,489,547)	₩	(3,299,290,856)	₩	490,530,411	₩	-
Interest rate swaps		(14,676,118,357)		476,220,740		856,396,290		(305,753,443)
	₩	(25,996,607,904)	₩	(2,823,070,116)	₩	1,346,926,701	₩	(305,753,443)

8. Trade and other receivables

Details of trade and other receivables as of December 31, 2022 and 2021 are as follows (Korean won):

	2022					
	Gross amounts		Allowance for doubtful accounts		Book value	
Current assets:						
Trade receivables	₩	707,794,672	₩	-	₩	707,794,672
Other receivables		54,744,526,266		(4,988,566,829)		49,755,959,437
Accrued income		80,814,719,629		(78,487,960,935)		2,326,758,694
		136,267,040,567		(83,476,527,764)		52,790,512,803
Non-current assets:						
Other receivables	₩	12,189,354,678	₩	(10,030,474,024)	₩	2,158,880,654
Deposits		10,665,019,183		-		10,665,019,183
		22,854,373,861		(10,030,474,024)		12,823,899,837
	₩	159,121,414,428	₩	(93,507,001,788)	₩	65,614,412,640

	2021					
	Gross amounts		Allowance for doubtful accounts		Book value	
Current assets:						
Trade receivables	₩	8,954,259,175	₩	(1,553,808,449)	₩	7,400,450,726
Other receivables		32,520,706,445		(2,924,957,087)		29,595,749,358
Accrued income		75,146,005,508		(73,425,920,019)		1,720,085,489
		116,620,971,128		(77,904,685,555)		38,716,285,573
Non-current assets:						
Other receivables	₩	18,339,753,942	₩	(10,030,474,024)	₩	8,309,279,918
Deposits		12,555,680,236		-		12,555,680,236
		30,895,434,178		(10,030,474,024)		20,864,960,154
	₩	147,516,405,306	₩	(87,935,159,579)	₩	59,581,245,727

8. Trade and other receivables(cont'd)

The aging analysis of trade and other receivables as of December 31, 2022 and 2021 is as follows (Korean won):

	2022		2021	
	Trade receivables	Other receivables	Trade receivables	Other receivables
Neither overdue nor impaired	₩ 707,794,672	₩ 64,906,617,968	₩ 7,400,450,726	₩ 52,180,795,001
Overdue but not impaired receivables				
Impaired receivables: More than 120 days	-	93,507,001,788	1,553,808,449	86,381,351,130
	707,794,672	158,413,619,756	8,954,259,175	138,562,146,131
Less: allowance for doubtful accounts	-	(93,507,001,788)	(1,553,808,449)	(86,381,351,130)
	₩ 707,794,672	₩ 64,906,617,968	₩ 7,400,450,726	₩ 52,180,795,001

Changes in allowance for doubtful accounts on trade and other receivables for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are follows (Korean won):

	2022		2021(September 10 to December 31)	
	Trade receivables	Other receivables	Trade receivables	Other receivables
Beginning	₩ 1,553,808,449	₩ 86,381,351,130	₩ 1,526,284,217	₩ 85,079,838,114
Bad debt expense	-	7,228,877,064	27,524,232	1,273,988,784
Reversal of unused amounts	(1,693,330,093)	(70,918,200)	-	-
Others	139,521,644	(32,308,206)	-	27,524,232
Ending	₩ -	₩ 93,507,001,788	₩ 1,553,808,449	₩ 86,381,351,130

The Group considers the change of credit ratings of other receivables to assess their credit risk from the initial recognition date to the reporting date. The concentration of credit risk is limited because there are many customers and there is no correlation between customers.

9. Financial assets at FVTPL

Details of financial assets at FVTPL as of December 31, 2022 and 2021 are as follows (Korean won):

	2022		
	Acquisition cost	Book value	Fair value
SEDEX Minerals Limited	₩ 29,357,064,818	₩ -	₩ -
Seah M&S Co., Ltd.	6,794,250,505	19,554,053,600	19,554,053,600
Minerva Coal Pty Ltd, etc.	263,553,330	263,553,330	263,553,330
	₩ 36,414,868,653	₩ 19,817,606,930	₩ 19,817,606,930

	2021		
	Acquisition cost	Book value	Fair value
Global Dynasty Fund	₩ 672,731,189	₩ -	₩ -
SEDEX Minerals Limited	29,357,064,818	-	-
Seah M&S Co., Ltd.	6,794,250,505	14,253,399,200	14,253,399,200
Minerva Coal Pty Ltd, etc.	263,700,702	263,700,702	263,700,702
	₩ 37,087,747,214	₩ 14,517,099,902	₩ 14,517,099,902

9. Financial assets at FVTPL(cont'd)

Changes in financial assets at FVTPL for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

	2022			
	January 1	Valuation	Others	December 31
Seah M&S Co., Ltd	₩ 14,253,399,200	₩ 5,300,654,400	₩ -	₩ 19,554,053,600
Minerva Coal Pty Ltd, etc.	263,700,702	-	(147,372)	263,553,330
	₩ 14,517,099,902	₩ 5,300,654,400	₩ (147,372)	₩ 19,817,606,930

	2021			
	September 10	Valuation	Others	December 31
Seah M&S Co., Ltd	₩ 10,445,113,600	₩ 3,808,285,600	₩ -	₩ 14,253,399,200
Minerva Coal Pty Ltd, etc.	263,338,413	-	362,289	263,700,702
	₩ 10,708,452,013	₩ 3,808,285,600	₩ 362,289	₩ 14,517,099,902

10. Short-term and long-term loans

Details of short-term and long-term loans as of December 31, 2022 and 2021 are as follows (Korean won):

	2022			
	Gross amounts	Allowance for doubtful accounts	Present value discounts	Book value
Short-term loans	₩ 112,434,714,275	₩ (8,705,707,415)	₩ (1,136,688,248)	₩ 102,592,318,612
Long-term loans	1,473,156,107,708	(233,126,570,736)	(10,247,026,794)	1,229,782,510,178
	₩ 1,585,590,821,983	₩ (241,832,278,151)	₩ (11,383,715,042)	₩ 1,332,374,828,790

	2021			
	Gross amounts	Allowance for doubtful accounts	Present value discounts	Book value
Short-term loans	₩ 119,937,796,497	₩ (8,346,537,618)	₩ (1,112,743,581)	₩ 110,478,515,298
Long-term loans	1,368,495,881,303	(216,329,705,876)	(11,075,051,278)	1,141,091,124,149
	₩ 1,488,433,677,800	₩ (224,676,243,494)	₩ (12,187,794,859)	₩ 1,251,569,639,447

The aging analysis of loans as of December 31, 2022 and 2021 is as follows (Korean won):

	2022	2021
Neither overdue nor impaired	₩ 1,346,711,952,810	₩ 1,218,474,832,843
Overdue but not impaired loans	-	-
Impaired receivables:		
~60 days	704,910,000	46,402,048,080
~60~90 days	-	-
~90~120 days	-	201,310,000
More than 120 days	238,173,959,173	223,355,486,877
	1,585,590,821,983	1,488,433,677,800
Less: allowance for doubtful accounts	(241,832,278,151)	(224,676,243,494)
Less: present value discounts account	(11,383,715,042)	(12,187,794,859)
	₩ 1,332,374,828,790	₩ 1,251,569,639,447

Changes in allowance for doubtful accounts for loans for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

	2022	2021
Beginning	₩ 224,676,243,494	₩ 219,247,604,353
Bad debt expense	17,001,506,219	5,388,003,287
Reversal of unused amounts	(120,251,028)	(37,425,511)
Others	274,779,466	78,061,365
Ending	₩ 241,832,278,151	₩ 224,676,243,494

11. Short-term financial instruments

Details of short-term financial instruments as of December 31, 2022 and 2021 are as follows (Korean won):

	2022	2021
Deposit	₩ 54,175,203,635	₩ 16,790,284,177

12. Inventories

Details of inventories as of December 31, 2022 and 2021 are as follows (Korean won):

	2022		
	Acquisition cost	Valuation allowance	Book value
Finished goods	₩ 6,825,479	₩ -	₩ 6,825,479
Supplies	66,430,490,011	(17,483,906,683)	48,946,583,328
Goods in transit	64,760,772,486	-	64,760,772,486
	₩ 131,198,087,976	₩ (17,483,906,683)	₩ 113,714,181,293

	2021		
	Acquisition cost	Valuation allowance	Book value
Work in process	₩ 8,177,160,601	₩ -	₩ 8,177,160,601
Finished goods	913,055,479	-	913,055,479
Supplies	40,029,147,458	(13,189,871,008)	26,839,276,450
Goods in transit	42,504,303,289	-	42,504,303,289
	₩ 91,623,666,827	₩ (13,189,871,008)	₩ 78,433,795,819

13. Non-financial assets

Details of non-financial assets as of December 31, 2022 and 2021 are as follows (Korean won):

	2022		2021	
	Current	Non-current	Current	Non-current
Advanced payments	₩ 4,376,503,158	₩ -	₩ 2,875,536,062	₩ -
Prepaid expenses	13,439,706,352	-	13,406,471,677	-
Minerals held in reserve	-	237,601,590,939	-	226,225,330,215
Others	1,782,688,662	5,354,358,058	1,436,463,377	5,421,348,708
	₩ 19,598,898,172	₩ 242,955,948,997	₩ 17,718,471,116	₩ 231,646,678,923

14. Investments in associates and joint ventures

Details of investments in associates and joint ventures as of December 31, 2022 and 2021 are as follows (Korean won):

			2022		
	Principal activity	Country of incorporation	Equity interest (%)	Acquisition cost	Book value
<ASSOCIATES>					
Xian Maxun KORES New Material Corporation Ltd.	Mining	China	49.00	₩ 6,638,417,887	₩ –
ZhangjiagangWonjin-KORES Industrial Material Corporation Ltd.	Mining	China	49.00	3,200,922,460	3,840,798,636
ZhangjiagangWonjin-KORES Resources Recovery Reutilization Corporation Ltd.	Mining	China	49.00	3,765,957,522	6,150,024,104
AMSA/DMSA (Ambatovy)(*1)	Mining	Madagascar	38.03	2,756,463,866,653	618,805,521,880
Korean Boleo Corporation on S.A. de C.V.	Mining	Mexico	46.92	152,649,898,649	-
Philco Resources Ltd.	Mining	Malaysia	40.00	325,934,829	-
Haein Resources Corporation(*2)	Mining	South Korea	49.00	3,087,000,000	-
Springvale SK Kores Pty Ltd.	Mining	Australia	50.00	48,641,284,222	-
Mkuju Resources Tanzania Ltd	Mining	Tanzania	28.00	2,260,744,831	-
PT. KCT	Mining	Indonesia	24.00	473,949,000	-
Enertech	Mining	South Korea	25.55	732,954,500	-
Kangwon Land, Inc	Casino, Hotel, Golf, Ski, Mansion	South Korea	36.27	50,999,998,392	1,247,543,486,160
Mungyeong Leisure Town Co., Ltd	Golf, Mansion	South Korea	36.36	24,000,000,000	27,284,087,977
Black Valley Country Club Co., Ltd	Golf	South Korea	11.03	10,000,000,000	11,016,594,892
Kidslala, Inc	Children's Vocational Theme Park	South Korea	38.17	25,000,000,000	21,108,269,326
Hym-namu Co., Ltd.	Energy	South Korea	20.00	2,000,040,000	1,957,744,876
				3,090,240,968,945	1,937,706,527,851
<JOINT VENTURES>					
Jungchon Natural Graphite Cooperation	Mining	North Korea	50.00	6,034,005,670	-
Korea Panama Mining Corporation	Mining	Panama	50.00	206,477,280,033	312,970,507,049
KLS	Mining	Peru	50.00	45,459,484,767	10,212,121,376
				257,970,770,470	323,182,628,425
				₩ 3,348,211,739,415	₩ 2,260,889,156,276

(*1) It includes the impacts of participating in the joint operations.(Note 45)
(*2) It went bankrupt and closed during the current year.

			2021		
	Principal activity	Country of incorporation	Equity interest (%)	Acquisition cost	Book value
<ASSOCIATES>					
Xian Maxun KORES New Material Corporation Ltd.	Mining	China	49.00	₩ 6,638,417,887	₩ –
ZhangjiagangWonjin-KORES Industrial Material Corporation Ltd.	Mining	China	49.00	3,200,922,460	3,635,968,075
ZhangjiagangWonjin-KORES Resources Recovery Reutilization Corporation Ltd.	Mining	China	49.00	3,765,957,522	5,917,238,738
AMSA/DMSA (Ambatovy) (*1)	Mining	Madagascar	38.03	2,756,463,866,653	594,798,233,562
Korean Boleo Corporation on S.A. de C.V.	Mining	Mexico	46.92	152,649,898,649	-
Philco Resources Ltd.	Mining	Malaysia	40.00	325,934,829	-
Haein Resources Corporation	Mining	South Korea	49.00	3,087,000,000	-
Springvale SK Kores Pty Ltd.	Mining	Australia	50.00	48,641,284,222	-
Mkuju Resources Tanzania Ltd	Mining	Tanzania	28.00	2,260,744,831	-
PT. KCT	Mining	Indonesia	24.00	473,949,000	-
Enertech	Mining	South Korea	25.55	732,954,500	-
Kangwon Land, Inc	Casino, Hotel, Golf, Ski, Mansion	South Korea	36.27	50,999,998,392	1,188,578,761,303
Mungyeong Leisure Town Co., Ltd	Golf, Mansion	South Korea	36.36	24,000,000,000	26,253,321,518
Black Valley Country Club Co., Ltd	Golf	South Korea	11.03	10,000,000,000	10,667,517,324
Kidslala, Inc	Children's Vocational Theme Park	South Korea	38.17	25,000,000,000	22,456,050,090
				3,088,240,928,945	1,852,307,090,610
<JOINT VENTURES>					
Jungchon Natural Graphite Cooperation	Mining	North Korea	50.00	6,034,005,670	-
Korea Panama Mining Corporation	Mining	Panama	50.00	206,477,280,033	239,562,876,250
KLS	Mining	Peru	50.00	45,459,484,767	11,535,059,631
				257,970,770,470	251,097,935,881
				₩ 3,346,211,699,415	₩ 2,103,405,026,491

(*1) It includes the impacts of participating in the joint operations.(Note 45)

14. Investments in associates and joint ventures (cont'd)

Changes in investment in associates and joint ventures for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

	2022							
	January 1	Acquisition	Dividends	Share of profit	Changes in equity adjustments in equity method	Changes in retained earnings in equity method	Others	December 31
<ASSOCIATES>								
Enertech	₩ -	₩ -	₩ -	₩ -	₩ -	₩ -	₩ -	₩ -
Xian Maxun KORES New Material Corporation Ltd.	-	-	-	-	-	-	-	-
Zhangjiagang Wonjin-KORES Industrial Material Corporation Ltd.	3,635,968,075	-	(271,160,098)	433,812,429	(99,304,872)		141,483,102	3,840,798,636
Zhangjiagang Wonjin-KORES Resources Recovery Reutilization Corporation Ltd.	5,917,238,738	-	(567,526,223)	865,047,409	(156,006,112)		91,270,292	6,150,024,104
AMSA/DMSA (Ambatovy) (*1)	594,798,233,563	-	-	(17,365,366,384)	27,726,174,740		13,646,479,961	618,805,521,880
Korean Boleo Corporation on S.A. de C.V.	-	-	-	-	-	-	-	-
Philco Resources Ltd.	-	-	-	-	-	-	-	-
Haein Resource Corporation	-	-	-	-	-	-	-	-
Springvale SK Kores Pty Ltd.	-	-	-	-	-	-	-	-
Mkuju Resources Tanzania Ltd	-	-	-	-	-	-	-	-
PT. KCT	-	-	-	-	-	-	-	-
Kangwon Land, Inc	1,188,578,761,303			41,929,771,329	-	17,034,953,528		1,247,543,486,160
Mungyeong Leisure Town Co., Ltd	26,253,321,518	-	-	1,030,766,459	-	-	-	27,284,087,977
Black Valley Country Club Co., Ltd	10,667,517,324	-	-	349,077,568	-	-	-	11,016,594,892
Kidslala, Inc	22,456,050,090	-	-	(1,347,780,764)	-	-	-	21,108,269,326
Hym-namu Co., Ltd.	-	2,000,040,000	-	(42,295,124)	-	-	-	1,957,744,876
	1,852,307,090,611	2,000,040,000	(838,686,321)	25,853,032,922	27,470,863,756	17,034,953,528	13,879,233,355	1,937,706,527,851
<JOINT VENTURES>								
Jungchon Natural Graphite Cooperation	-	-	-	-	-	-	-	-
Korea Panama Mining Corporation	239,562,876,249	-	-	57,983,017,950	15,424,612,850	-	-	312,970,507,049
KLS	11,535,059,631	-	(2,998,783,904)	838,709,393	-	-	837,136,256	10,212,121,376
	251,097,935,880	-	(2,998,783,904)	58,821,727,343	15,424,612,850	-	837,136,256	323,182,628,425
	₩ 2,103,405,026,491	₩ 2,000,040,000	₩ (3,837,470,225)	₩ 84,674,760,265	₩ 42,895,476,606	₩ 17,034,953,528	₩ 14,716,369,611	₩ 2,260,889,156,276

(*1) It includes the impact of participating in joint operations (Note 45).

14. Investments in associates and joint ventures (cont'd)

	2021						
	September 10	Dividends	Share of profit	Changes in equity adjustments in equity method	Changes in retained earnings in equity method	Others	December 31
<ASSOCIATES>							
Enertech	₩ -	₩ -	₩ -	₩ -	₩ -	₩ -	₩ -
Xian Maxun KORES New Material Corporation Ltd.	-	-	-	-	-	-	-
Zhangjiagang Wonjin-KORES Industrial Material Corporation Ltd.	3,660,306,425	(141,483,102)	(6,102,881)	123,247,633		-	3,635,968,075
Zhangjiagang Wonjin-KORES Resources Recovery Reutilization Corporation Ltd.	5,834,470,574	(91,270,292)	(22,301,195)	196,339,651		-	5,917,238,738
AMSA/DMSA (Ambatovy) (*1)	570,498,632,454	-	12,120,156,575	8,757,815,129		3,421,629,404	594,798,233,562
Korean Boleo Corporation on S.A. de C.V.	-	-	-	-	-	-	-
Philco Resources Ltd.	-	-	-	-	-	-	-
Haein Resource Corporation	-	-	-	-	-	-	-
Springvale SK Kores Pty Ltd.	-	-	-	-	-	-	-
Mkuju Resources Tanzania Ltd	-	-	-	-	-	-	-
PT. KCT	-	-	-	-	-	-	-
Kangwon Land, Inc	1,185,971,387,311		(3,575,352,205)		6,182,726,197		1,188,578,761,303
Mungyeong Leisure Town Co., Ltd	26,219,036,581	-	34,284,937	-	-	-	26,253,321,518
Black Valley Country Club Co., Ltd	10,644,055,623	-	23,461,701	-	-	-	10,667,517,324
Kidslala, Inc	22,726,996,987	-	(270,946,897)	-	-	-	22,456,050,090
	1,825,554,885,955	(232,753,394)	8,303,200,035	9,077,402,413	6,182,726,197	3,421,629,404	1,852,307,090,610
<JOINT VENTURES>							
Jungchon Natural Graphite Cooperation	-	-	-	-	-	-	-
Korea Panama Mining Corporation	208,981,554,285	-	26,732,364,082	3,848,957,883	-	-	239,562,876,250
KLS	10,982,216,674	-	353,732,814	-	-	199,110,143	11,535,059,631
	219,963,770,959	-	27,086,096,896	3,848,957,883	-	199,110,143	251,097,935,881
	₩ 2,045,518,656,914	₩ (232,753,394)	₩ 35,389,296,931	₩ 12,926,360,296	₩ 6,182,726,197	₩ 3,620,739,547	₩ 2,103,405,026,491

(*1) It includes the impact of participating in joint operations (Note 45).

14. Investments in associates and joint ventures (cont'd)

The summary of financial information of the Group's associates and joint ventures as of December 31, 2022 and 2021 are as follows (Korean won):

		2022			
		Total assets	Total liabilities	Revenue	Profit (loss) for the period
<Associates>					
Xian Maxun KORES New Material Corporation Ltd.	₩	25,093,748,905	19,672,626,987	7,386,609,659	(2,440,176,110)
Zhangjiagang Wonjin-KORES Industrial Material Corporation Ltd.		12,727,713,888	4,889,349,325	23,063,662,815	897,874,067
Zhangjiagang Wonjin-KORES Resources Recovery Reutilization Corporation Ltd.		15,517,432,186	2,966,362,587	33,287,840,649	1,765,402,875
AMSA/DMSA (Ambatovy)		4,035,866,391,000	2,412,098,980,000	1,493,547,170,000	(48,006,278,000)
Korean Boleo Corporation on S.A. de C.V.		845,715,322,138	393,635,814,190	117,369,362	(1,702,063,074)
Philco Resources Ltd.		133,485,026	7,624,567,118	219,532,395	(248,248,541)
Kangwon Land, Inc		4,167,752,670,696	752,374,769,957	1,270,685,819,109	115,612,767,888
Mungyeong Leisure Town Co., Ltd		78,939,432,492	3,908,190,550	15,185,913,249	2,812,622,506
Black Valley Country Club Co., Ltd		101,381,938,467	1,711,171,039	9,410,507,218	3,163,056,266
Kidslala, Inc		56,637,348,355	1,411,384,635	34,818,163	(3,526,934,553)
Hym-namu Co., Ltd.		9,866,303,458	77,579,080	-	(211,275,622)
		9,349,631,786,611	3,600,370,795,468	2,852,939,242,619	68,116,747,702
<Joint Ventures>					
Korea Panama Mining Corporation		2,217,489,857,500	1,591,548,843,400	263,614,645,800	115,944,760,800
KLS		21,981,190,503	1,555,604,414	-	1,677,417,494
		2,239,471,048,003	1,593,104,447,814	263,614,645,800	117,622,178,294
	₩	11,589,102,834,614	5,193,475,243,282	3,116,553,888,419	185,738,925,996

		2021			
		Total assets	Total liabilities	Revenue	Profit (loss) for the period
<Associates>					
Xian Maxun KORES New Material Corporation Ltd.	₩	25,840,116,612	17,984,711,082	1,108,777,406	(800,430,491)
Zhangjiagang Wonjin-KORES Industrial Material Corporation Ltd.		10,983,846,364	3,274,762,329	6,164,081,250	(12,454,859)
Zhangjiagang Wonjin-KORES Resources Recovery Reutilization Corporation Ltd.		15,114,298,554	2,852,035,225	7,801,101,021	(45,512,642)
AMSA/DMSA (Ambatovy)		3,631,856,307,500	2,068,846,873,000	395,116,429,400	32,650,186,800
Korean Boleo Corporation on S.A. de C.V.		764,949,419,817	340,514,677,858	36,992,080	(462,883,408)
Philco Resources Ltd.		135,479,556	6,909,679,459	66,903,582	(3,338,373,227)
Haein Resource Corporation		959,163,687	26,787,038,562	-	(988,546,817)
Kangwon Land, Inc		3,827,273,463,677	574,480,852,474	324,261,198,735	(9,858,700,533)
Mungyeong Leisure Town Co., Ltd		80,508,787,097	8,312,152,917	4,662,661,760	94,283,577
Black Valley Country Club Co., Ltd		97,581,275,345	1,074,860,293	2,392,133,958	212,677,901
Kidslala, Inc		58,837,238,730	80,429,857	-	(709,812,427)
		8,514,039,396,939	3,051,118,073,056	741,610,279,192	16,740,433,874
<Joint Ventures>					
Korea Panama Mining Corporation		2,035,310,263,500	1,556,184,511,000	88,659,653,313	53,464,728,163
KLS		23,705,889,872	634,516,351	-	707,464,446
		2,059,016,153,372	1,556,819,027,351	88,659,653,313	54,172,192,609
	₩	10,573,055,550,311	4,607,937,100,407	830,269,932,505	70,912,626,483

15. Investments in joint operations

Details of investments in joint operations as of December 31, 2022 and 2021 are as follows (Korean won):

	Key operation	Country of incorporation	Equity interest (%) 2022	Equity interest (%) 2021
Minerva	Mining	Australia	4.00	4.00
Athena (*1)	Mining	Australia	4.00	4.00
Narrabri	Mining	Australia	2.50	2.50
Togara North	Mining	Australia	8.33	8.33
Wyong	Mining	Australia	82.25	82.25

(*1) The Group recognized an impairment loss related to the Athena Project. Indications of impairment were identified due to the insufficient coal reserves in the mine and the resulting decline in production. In March 2022, the Overseas Assets Management Committee decided to terminate this project in 2023 and in May 2022, the Company's board of directors decided to suspend the payment of investment costs. The Group recognized an impairment loss of KRW 299,077,309 for the investment in joint operation and impairment loss of KRW 1,684,253,686 for other intangible assets (see Note 18).

16. Property, plant and equipment

Details of property, plant and equipment as of December 31, 2022 and 2021 are as follows (Korean won):

2022	Acquisition cost	Government grants	Entrusted funds	Accumulated depreciation	Accumulated impairment losses	Book value
Land	₩ 84,827,053,948	₩ (18,225,413,403)	₩ -	₩ -	₩ (1,143,811,702)	₩ 65,457,828,843
Buildings	1,003,501,491,683	(23,187,963,988)	-	(829,616,247,445)	-	150,697,280,250
Structures	62,469,384,023	(22,329,683,127)	-	(17,328,255,012)	-	22,811,445,884
Machinery	540,627,527,769	(5,891,760,999)	-	(252,403,273,440)	-	282,332,493,330
Vehicles	104,525,072,926	(531,654,765)	-	(87,692,197,915)	-	16,301,220,246
Construction in progress	36,254,411,926	(68,262,000)	-	-	-	36,186,149,926
Right-of-use assets	2,867,048,562	-	-	(1,320,124,589)	-	1,546,923,973
Others	26,110,834,610	(613,723,777)	(5,109,350)	(21,638,382,725)	-	3,853,618,758
	₩ 1,861,182,825,447	₩ (70,848,462,059)	₩ (5,109,350)	₩ (1,209,998,481,126)	₩ (1,143,811,702)	₩ 579,186,961,210

2021	Acquisition cost	Government grants	Entrusted funds	Accumulated depreciation	Accumulated impairment losses	Book value
Land	₩ 87,548,185,043	₩ (20,010,261,231)	₩ -	₩ -	₩ (1,144,451,291)	₩ 66,393,472,521
Buildings	919,479,987,030	(25,191,729,448)	-	(750,332,163,372)	-	143,956,094,210
Structures	59,672,372,262	(24,049,172,866)	-	(14,319,603,845)	-	21,303,595,551
Machinery	502,661,268,219	(4,151,768,042)	-	(207,385,878,152)	-	291,123,622,025
Vehicles	103,763,985,187	(632,160,520)	-	(83,175,279,491)	-	19,956,545,176
Construction in progress	43,920,580,010	(2,624,873,889)	-	-	-	41,295,706,121
Right-of-use assets	2,369,222,615	-	-	(1,398,222,979)	-	970,999,636
Others	25,081,343,316	(174,194,627)	(9,911,174)	(20,054,425,832)	-	4,842,811,683
	₩ 1,744,496,943,682	₩ (76,834,160,623)	₩ (9,911,174)	₩ (1,076,665,573,671)	₩ (1,144,451,291)	₩ 589,842,846,923

16. Property, plant and equipment (cont'd)

Changes in property, plant and equipment for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

	2022					
	January 1	Acquisition/additions	Disposal	Depreciation	Others	December 31
Land	₩ 86,403,733,752	₩ 491,050,163	₩ (1,837,079,880)	₩ -	₩ (1,374,461,789)	₩ 83,683,242,246
Government grants	(20,010,261,231)	-	1,784,847,828	-	-	(18,225,413,403)
Buildings	169,147,823,658	169,545,649	-	(32,762,831,139)	37,330,706,070	173,885,244,238
Government grants	(25,191,729,448)	-	-	2,379,950,760	(376,185,300)	(23,187,963,988)
Structures	45,352,768,416	10,072,290	-	(3,012,864,314)	2,791,152,619	45,141,129,011
Government grants	(24,049,172,866)	-	-	1,719,489,739	-	(22,329,683,127)
Machinery	295,275,390,068	1,218,943,756	-	(33,185,803,830)	24,915,724,335	288,224,254,329
Government grants	(4,151,768,042)	(103,125,000)	-	648,732,043	(2,285,600,000)	(5,891,760,999)
Vehicles	20,588,705,696	864,923,058	-	(6,066,785,030)	1,446,031,287	16,832,875,011
Government grants	(632,160,520)	-	-	100,505,755	-	(531,654,765)
Construction in progress	43,920,580,010	20,298,068,382	-	-	(27,964,236,466)	36,254,411,926
Government grants	(2,624,873,889)	-	-	-	2,556,611,889	(68,262,000)
Others	5,017,006,310	895,967,841	-	(1,443,666,351)	(1,965,265)	4,467,342,535
Government grants	(174,194,627)	(484,277,200)	-	44,748,050	-	(613,723,777)
Right-of-use assets	970,999,636	1,463,428,379	-	(878,449,403)	(9,054,639)	1,546,923,973
	₩ 589,842,846,923	₩ 24,824,597,318	₩ (52,232,052)	₩ (72,456,973,720)	₩ 37,028,722,741	₩ 579,186,961,210

	2021				
	September 10	Disposals	Depreciation	Others	December 31
Land	₩ 79,936,195,275	₩ 6,510,745,565	₩ -	₩ (43,207,088)	₩ 86,403,733,752
Government grants	(20,010,261,231)	-	-	-	(20,010,261,231)
Buildings	161,669,940,043	2,784,634,949	(9,850,572,999)	14,543,821,665	169,147,823,658
Government grants	(25,912,636,381)	-	791,906,933	(71,000,000)	(25,191,729,448)
Structures	43,065,031,237	1,091,593,453	(959,290,426)	2,155,434,153	45,352,768,417
Government grants	(24,622,336,110)	-	573,163,244	-	(24,049,172,866)
Machinery	295,623,217,627	4,548,085,751	(11,627,673,553)	6,731,760,242	295,275,390,067
Government grants	(3,019,285,311)	(1,300,039,000)	167,556,269	-	(4,151,768,042)
Vehicles	21,070,164,499	999,180,275	(1,849,258,582)	368,619,504	20,588,705,696
Government grants	(16,726,733)	(629,000,000)	13,566,213	-	(632,160,520)
Construction in progress	41,206,533,610	8,391,378,818	-	(5,677,332,418)	43,920,580,010
Government grants	(2,691,447,300)	(4,426,589)	-	71,000,000	(2,624,873,889)
Others	4,922,696,409	599,590,117	(505,360,500)	80,284	5,017,006,310
Government grants	(171,286,105)	(17,820,000)	14,911,478	-	(174,194,627)
Right-of-use assets	1,026,782,662	251,168,558	(307,420,814)	469,230	970,999,636
	₩ 572,076,582,191	₩ 23,225,091,897	₩ (23,538,472,737)	₩ 18,079,645,572	₩ 589,842,846,923

(*) It includes amounts reclassified from investment properties and intangible assets.

16 . Property, plant and equipment (cont'd)

Details of assets insured as of December 31, 2022 and 2021 are as follows (Korean won):

	2022		
	Secured creditor	Book value	Collateral amount
Land, Buildings	SKC CO.,LTD	5,890,664,080	122,791,500

	2021		
	secured creditor	Book value	Collateral amount
Land, Buildings	Officedepo Korea Co.,Ltd.	₩ 5,604,985,512	₩ 240,000,000
Land, Buildings	SKC CO.,LTD	5,604,985,512	231,283,000
Land, Buildings	CJ Foodville Co., Ltd.	5,604,985,512	58,279,000
Land, Buildings	National Health Insurance Service	11,341,340,116	1,239,528,000

17. Investment properties

Details of investment properties as of December 31, 2022 and 2021 are as follows (Korean won):

	2022					
	Acquisition cost		Accumulated depreciation		Book values	
Land	₩	6,282,792,747	₩	-	₩	6,282,792,747
Buildings		29,295,917,732		(14,797,627,285)		14,498,290,447
	₩	35,578,710,479	₩	(14,797,627,285)	₩	20,781,083,194

	2021					
	Acquisition cost		Accumulated depreciation		Book values	
Land	₩	4,566,625,881	₩	-	₩	4,566,625,881
Buildings		26,164,433,412		(13,475,335,540)		12,689,097,872
	₩	30,731,059,293	₩	(13,475,335,540)	₩	17,255,723,753

Changes in the net book value of investment properties for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

	2022							
	January 1		Depreciation		Replacement		December 31	
Land	₩	4,566,625,881	₩	-	₩	1,716,166,866	₩	6,282,792,747
Buildings		12,689,097,872		(749,187,752)		2,558,380,327		14,498,290,447
	₩	17,255,723,753	₩	(749,187,752)	₩	4,274,547,193	₩	20,781,083,194

	2021							
	September 10		Depreciation		Replacement		December 31	
Land	₩	4,426,066,351	₩	-	₩	140,559,530	₩	4,566,625,881
Buildings		12,654,609,489		(216,368,637)		250,857,020		12,689,097,872
	₩	17,080,675,840	₩	(216,368,637)	₩	391,416,550	₩	17,255,723,753

Details of rental income and expense for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

	2022		2021	
Rental income	₩	6,234,680,741	₩	1,982,592,811
Rental expense		(3,029,130,107)		(930,544,663)
	₩	3,205,550,634	₩	1,052,048,148

Investment properties owned by the Group are few rented out floors of its headquarter building. It is difficult to measure reliable fair value because there are no similar real estate transactions. The investment properties are measured by cost method(K-IFRS 1116).

All investment properties of the Group are directly owned by the Group.

18. Intangible assets

Details of intangible assets as of December 31, 2022 and 2021 are as follows (Korean won):

	2022				
	Acquisition cost	Government grants	Accumulated amortization	Accumulated impairment losses	Book value
Exploration and evaluation assets	₩ 52,536,443,275	₩ (15,276,280,853)	₩ -	₩ (2,606,101,460)	₩ 34,654,060,962
Software	49,375,272,149	(6,316,200)	(42,285,278,101)	-	7,083,677,848
Industrial property rights	6,546,000	-	(6,546,000)	-	-
Mining right	2,017,050	-	-	-	2,017,050
Other intangible assets	45,717,861,968	-	(8,350,688,964)	(35,989,883,506)	1,377,289,498
	₩ 147,638,140,442	₩ (15,282,597,053)	₩ (50,642,513,065)	₩ (38,595,984,966)	₩ 43,117,045,358

	2021				
	Acquisition cost	Government grants	Accumulated amortization	Accumulated impairment losses	Book value
Exploration and evaluation assets	₩ 51,588,569,576	₩ (15,276,280,853)	₩ -	₩ (2,606,101,460)	₩ 33,706,187,263
Software	45,971,594,980	(8,929,800)	(38,754,867,403)	-	7,207,797,777
Industrial property rights	6,546,000	-	(6,546,000)	-	-
Mining right	2,017,050	-	-	-	2,017,050
Other intangible assets	45,774,253,275	-	(8,355,358,447)	(34,394,484,098)	3,024,410,730
Intangible assets in development	1,649,740,980	-	-		1,649,740,980
	₩ 144,992,721,861	₩ (15,285,210,653)	₩ (47,116,771,850)	₩ (37,000,585,558)	₩ 45,590,153,800

Changes in other intangible assets for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

	2022						
	January 1	Acquisition	Disposal	Depreciation	Others	Impairment	December 31
Exploration and evaluation assets	₩ 48,982,468,116	₩ 1,017,306,870	₩ -	₩ -	₩ -	₩ (69,433,171)	₩ 49,930,341,815
Government grants	(15,276,280,853)	-	-	-	-	-	(15,276,280,853)
Software	7,216,727,577	1,042,977,397	-	(3,000,373,816)	-	1,830,662,890	7,089,994,048
Government grants	(8,929,800)	-	-	2,613,600	-	-	(6,316,200)
Mining rights	2,017,050	-	-	-	-	-	2,017,050
Other intangible assets	3,024,410,730	-	(31,597,240)	-	(1,684,253,686)	68,729,694	1,377,289,498
Intangible assets in development	1,649,740,980	-	-	-	-	(1,649,740,980)	-
	₩ 45,590,153,800	₩ 2,060,284,267	₩ (31,597,240)	₩ (2,997,760,216)	₩ (1,684,253,686)	₩ 180,218,433	43,117,045,358

	2021				
	September 10	Acquisition/additions	Amortization	Others	December 31
Exploration and evaluation assets	₩ 48,417,368,910	₩ 499,899,043	₩ -	₩ 65,200,163	₩ 48,982,468,116
Government grants	(15,276,280,853)	-	-	-	(15,276,280,853)
Software	8,002,261,552	227,229,160	(1,059,048,621)	46,285,486	7,216,727,577
Government grants	(9,813,000)	-	883,200	-	(8,929,800)
Mining rights	2,017,050	-	-	-	2,017,050
Other intangible assets	3,007,076,062	15,115,154	-	2,219,514	3,024,410,730
Intangible assets in development	239,930,000	1,409,810,980	-	-	1,649,740,980
	₩ 44,382,559,721	₩ 2,152,054,337	₩ (1,058,165,421)	₩ 113,705,163	₩ 45,590,153,800

19. Financial liabilities

Details of financial liabilities as of December 31, 2022 and 2021 are as follows (Korean won):

	2022		2021	
	Current	Non-current	Current	Non-current
Short-term borrowings	₩ 155,000,000,000	-	₩ 55,000,000,000	-
Long-term borrowings	987,086,991,884	1,418,507,011,592	1,242,829,093,218	1,201,590,697,617
Borrowings from Special Account for Energy and Resources, net	-	7,847,668,000	-	7,847,668,000
Bonds payable	1,003,230,411,401	3,508,282,475,231	593,632,366,156	3,843,849,674,147
Derivative liabilities	34,761,401,746	-	8,764,793,842	-
	₩ 2,180,078,805,031	4,934,637,154,823	₩ 1,900,226,253,216	5,053,288,039,764

20. Borrowings and bonds payable

Details of borrowings and bonds payable as of December 31, 2022 and 2021 are as follows(Korean won):

	2022	2021
Current liabilities:		
Short-term borrowings	₩ 155,000,000,000	₩ 55,000,000,000
Current portion of long-term borrowings	987,867,955,048	1,249,187,434,829
Less: present value discount	(780,963,164)	(6,358,341,611)
Current portion of bonds payable	1,003,650,000,000	593,837,500,000
Less: present value discount	(419,588,599)	(205,133,844)
	2,145,317,403,285	1,891,461,459,374
Non-current liabilities:		
Long-term borrowings	1,423,964,147,144	1,208,993,060,638
Less: present value discount	(5,457,135,552)	(7,402,363,021)
Borrowings from Special Account for Energy and Resources	7,847,668,000	7,847,668,000
Bonds payable	3,517,727,888,237	3,854,793,831,576
Less: present value discount	(9,445,413,006)	(10,944,157,429)
	4,934,637,154,823	5,053,288,039,764
	₩ 7,079,954,558,108	₩ 6,944,749,499,138

The repayment schedules of borrowings and bonds payable are as follows (Korean won):

	2022		
	Borrowings(*)	Bonds payable	Total
Within 1 year	₩ 1,142,867,955,048	₩ 1,003,650,000,000	₩ 2,146,517,955,048
After 1 year but no later than 5 years	1,096,034,000,000	2,460,592,352,237	3,556,626,352,237
Later than 5 years	327,930,147,145	1,057,135,536,000	1,385,065,683,145
	₩ 2,566,832,102,193	₩ 4,521,377,888,237	₩ 7,088,209,990,430

	2021		
	Borrowings(*)	Bonds payable	Total
Within 1 year	₩ 1,304,280,044,563	₩ 593,837,500,000	₩ 1,898,117,544,563
After 1 year but no later than 5 years	921,774,723,586	2,805,864,471,576	3,727,639,195,162
Later than 5 years	287,125,727,318	1,048,929,360,000	1,336,055,087,318
	₩ 2,513,180,495,467	₩ 4,448,631,331,576	₩ 6,961,811,827,043

(*) Long-term borrowings exclude borrowings from "Special Account for Energy and Resources".

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

	Financial institution	Annual interest rate	Maturity	2022	2021
Short-term borrowings	National Resource 2nd	AAA average rate +0.45%	2023-03-11	₩ 55,000,000,000	₩ 55,000,000,000
Commercial paper	DB, SK, Kyobo Securities	4.95%	2023-01-18	100,000,000,000	-
				155,000,000,000	55,000,000,000

(*) The Company provided payment guarantees for the loans payable of MMB (Note 44).

20. Borrowings and bonds payable(cont'd)

Details of long-term borrowings as of December 31, 2022 and 2021 are as follows (USD and Korean won):

				2022		
	Financial institution	Annual interest rate	Maturity	Foreign currencies		Equivalent Korean won
Long-term borrowings in KRW	Ministry of Unification(*1)	1.50%	2026-06-18		-	₩ 6,034,000,000
	Onetrust 1st	2.50%	2023-11-28		-	200,000,000,000
	National Resources 1st	2.23%	2023-02-20		-	200,000,000,000
	Lucky star 2nd	1.96%	2023-02-28		-	30,000,000,000
		1.96%	2025-05-29		-	20,000,000,000
		1.96%	2023-06-25		-	30,000,000,000
	DB & Kyobo Investment	1.57%	2023-07-14		-	30,000,000,000
	Highest 8th	2.55%	2023-07-24		-	200,000,000,000
	Hanyang(EUGENE) Securities Co, Ltd	1.43%	2023-02-02		-	100,000,000,000
	Hanyang(EUGENE) Securities Co, Ltd	1.49%	2024-02-02		-	100,000,000,000
	Hana bank	3M CD + 0.42%	2027-02-18		-	150,000,000,000
	Hana bank	3M CD + 0.65%	2027-07-08			100,000,000,000
	Hana bank(*5)	3M CD + 1.12%	2025-11-01			100,000,000,000
	Hana bank(*5)	3M CD + 1.25%	2025-11-14			100,000,000,000
	DB, SK & Kyobo Investment	4.95%	2024-08-24			110,000,000,000
	DB, SK & Kyobo Investment	4.96%	2026-08-24			50,000,000,000
	DB, SK & Kyobo Investment	4.98%	2027-08-24			70,000,000,000
	Neo Power(*2)	3.26%	2025-03-11		-	290,000,000,000
Long-term borrowings in foreign currency	Korea EXIM(*3)	Libor(6M)+0.9%	2023-08-26	USD	4,842,449	6,136,835,935
	Baja funding loan(*4)	Libor(3M)+3.50%	2023-09-07	USD	55,234,283	69,998,406,288
	Equity loan	10.00%	2030-09-07	USD	258,762,840	327,930,147,145
	Equity loan	4.00%	2023-12-31	USD	96,056,745	121,732,712,825
				USD	414,896,317	2,411,832,102,193
Less: current portion						(987,867,955,048)
Less: present value discount						(6,238,098,717)
Less: current portion of present value discount						780,963,164
						₩ 1,418,507,011,592

				2021		
	Financial institution	Annual interest rate	Maturity	Foreign currencies		Equivalent Korean won
Long-term borrowings in KRW	Ministry of Unification(*1)	1.50%	2026-06-18		-	₩ 6,034,000,000
	KEB Hana Bank	3M CD+0.27%	2022-02-18		-	200,000,000,000
	Onetrust 1st	2.50%	2023-11-28		-	200,000,000,000
	SK Securities	1.75%	2022-07-11		-	110,000,000,000
	KIWOOM Securities etc.	2.00%	2022-10-31		-	150,000,000,000
	EUGENE Investment & Hi Securities Co., Ltd. etc.	2.12%	2022-11-28		-	100,000,000,000
	National Resources 1st	2.56%	2023-02-20		-	200,000,000,000
	Lucky star 2nd	2.60%	2023-02-28		-	30,000,000,000
		2.70%	2025-05-29		-	20,000,000,000
		2.60%	2023-06-26		-	30,000,000,000
	DB Financial Investment & Securities Co, Ltd	1.45%	2022-07-15		-	20,000,000,000
	DB & Kyobo Investment	1.57%	2023-07-14		-	30,000,000,000
	Highest 8th	2.55%	2023-07-24		-	200,000,000,000
	Eswaimir 1st	2.33%	2022-08-25		-	200,000,000,000
	Hanyang(EUGENE) Securities Co, Ltd	1.43%	2023-02-02		-	100,000,000,000
	Hanyang(EUGENE) Securities Co, Ltd	1.49%	2024-02-02		-	100,000,000,000
	Neo Power(*2)	2.50%	2022-03-11		-	290,000,000,000
Long-term borrowings in foreign currency	Korea EXIM(*3)	Libor(6M)+0.9%	2023-07-05	USD	9,699,462	11,498,712,450
	Baja funding loan(*4)	Libor(3M)+3.50%	2022-09-07	USD	53,153,602	63,013,595,124
	Equity loan	10.00%	2030-09-07	USD	242,197,999	287,125,727,318
	Equity loan	4.00%	2021-12-31	USD	93,216,753	110,508,460,575
				USD	39/,267 816	2,458,180,495,467
Less: current portion						(1,249,187,434,829)
Less: present value discount						(13,760,704,632)
Less: current portion of present value discount						6,358,341,611
						₩ 1,201,590,697,617

(*1) The interest rate is reduced by 1.5% until June 18, 2026.
(*2) The Company provided payment guarantees for the loans payable of MMB (Note 44).
(*3) Repayments are to be made biannually in January and July until the date of maturity.
(*4) The maturity date of the loan was September 7, 2022, and creditors agreed the deferral of its maturity until 2023, but SK Networks Co, Ltd. who owns the right for the amount of USD 13,130,565 for the loan had opposed the extension and requested for redemption. Based on the agreement of the Shareholder´s loan to MMB. MMB had postponed its payment for the loan since MMB is obligated to redeem its senior loan prior to Baja funding loan.
(*5) The Group entered into an interest rate swap contract and pays a fixed interest rate on borrowings (see Note 7).

20. Borrowings and bonds payable (cont'd)

Details of bonds payable as of December 31, 2022 and 2021 are as follows (USD, AUD, HKD and Korean won):

			2022	
	Annual interest rate	Maturity date	Foreign currency	Equivalent Korean won
1st Korea Resources Corporation Bonds	3.80%	2023-11-13	-	100,000,000,000
2nd Korea Resources Corporation Bonds	3.67%	2024-04-15	-	100,000,000,000
3rd Korea Resources Corporation Bonds	2.81%	2030-07-10	-	110,000,000,000
4th-1 Korea Resources Corporation Bonds	1.90%	2026-02-18	-	80,000,000,000
4th-2 Korea Resources Corporation Bonds	2.04%	2036-02-18	-	100,000,000,000
Global Bond	4.13%	2027-04-20	USD 425,000,000	538,602,500,000
Global Bond	4.00%	2023-04-18	USD 500,000,000	633,650,000,000
5th Korea Resources Corporation Bonds	2.41%	2023-10-26	-	150,000,000,000
6th-1 Korea Resources Corporation Bonds	2.16%	2024-01-29	-	60,000,000,000
6th-2 Korea Resources Corporation Bonds	2.30%	2029-01-29	-	150,000,000,000
6th-3 Korea Resources Corporation Bonds	2.38%	2039-01-29	-	90,000,000,000
Global Bond	2.24%	2040-02-27	AUD 60,000,000	51,097,536,000
Global Bond	2.03%	2025-03-10	HKD 500,000,000	81,419,852,237
7th-2 Korea Resources Corporation Bonds	1.63%	2023-04-03	-	70,000,000,000
7th-3 Korea Resources Corporation Bonds	1.82%	2025-04-03	-	30,000,000,000
7th-4 Korea Resources Corporation Bonds	2.00%	2030-04-03	-	90,000,000,000
7th-5 Korea Resources Corporation Bonds	2.06%	2040-04-03	-	20,000,000,000
8th-1 Korea Resources Corporation Bonds	1.25%	2023-07-14	-	50,000,000,000
8th-2 Korea Resources Corporation Bonds	1.52%	2025-07-15	-	80,000,000,000
8th-3 Korea Resources Corporation Bonds	1.79%	2030-07-15	-	40,000,000,000
8th-4 Korea Resources Corporation Bonds	1.90%	2040-07-13	-	30,000,000,000
8th-5 Korea Resources Corporation Bonds	1.93%	2050-07-15	-	50,000,000,000
Global Bonds	1.95%	2040-07-16	USD 60,000,000	76,038,000,000
9th-1 Korea Resources Corporation Bonds	1.65%	2026-01-08	-	50,000,000,000
9th-2 Korea Resources Corporation Bonds	2.06%	2031-01-08	-	150,000,000,000
9th-3 Korea Resources Corporation Bonds	2.07%	2051-01-06	-	100,000,000,000
Global Bonds	1.75%	2026-04-15	USD 500,000,000	633,650,000,000
10th-1 Korea Resources Corporation Bonds	1.40%	2024-05-17	-	150,000,000,000
10th-2 Korea Resources Corporation Bonds	1.94%	2026-05-18	-	150,000,000,000
Global Bonds (*1)	3.25%	2024-04-17	USD 400,000,000	506,920,000,000
			USD 1,885,000,000 AUD 60,000,000 HKD 500,000,000	4,521,377,888,237
Less: bond discount				(9,865,001,605)
Less: current portion				(1,003,650,000,000)
Less: current portion of bond discount				419,588,599
				3,508,282,475,231

(*1) The Company provided payment guarantees for the loans payable of MMB (Note 44).

20. Borrowings and bonds payable (cont'd)

			2021	
	Annual interest rate	Maturity date	Foreign currency	Equivalent Korean won
1st Korea Resources Corporation Bonds	3.80%	2023-11-13	-	100,000,000,000
2nd Korea Resources Corporation Bonds	3.67%	2024-04-15	-	100,000,000,000
3rd Korea Resources Corporation Bonds	2.81%	2030-07-10	-	110,000,000,000
4th-1 Korea Resources Corporation Bonds	1.90%	2026-02-18	-	80,000,000,000
4th-2 Korea Resources Corporation Bonds	2.04%	2036-02-18	-	100,000,000,000
Global Bond	3.00%	2022-04-24	USD 425,000,000	503,837,500,000
Global Bond	4.00%	2023-04-18	USD 500,000,000	592,750,000,000
5th Korea Resources Corporation Bonds	2.41%	2023-10-26	-	150,000,000,000
6th-1 Korea Resources Corporation Bonds	2.16%	2024-01-29	-	60,000,000,000
6th-2 Korea Resources Corporation Bonds	2.30%	2029-01-29	-	150,000,000,000
6th-3 Korea Resources Corporation Bonds	2.38%	2039-01-29	-	90,000,000,000
Global Bond	3.01%	2040-02-26	AUD 60,000,000	47,799,360,000
Global Bond	2.09%	2025-03-09	HKD 500,000,000	76,164,471,576
7th-1 Korea Resources Corporation Bonds	1.55%	2022-04-01	-	90,000,000,000
7th-2 Korea Resources Corporation Bonds	1.63%	2023-04-03	-	70,000,000,000
7th-3 Korea Resources Corporation Bonds	1.82%	2025-04-03	-	30,000,000,000
7th-4 Korea Resources Corporation Bonds	2.00%	2030-04-03	-	90,000,000,000
7th-5 Korea Resources Corporation Bonds	2.06%	2040-04-03	-	20,000,000,000
8th-1 Korea Resources Corporation Bonds	1.25%	2023-07-14	-	50,000,000,000
8th-2 Korea Resources Corporation Bonds	1.52%	2025-07-15	-	80,000,000,000
8th-3 Korea Resources Corporation Bonds	1.79%	2030-07-15	-	40,000,000,000
8th-4 Korea Resources Corporation Bonds	1.90%	2040-07-13	-	30,000,000,000
8th-5 Korea Resources Corporation Bonds	1.93%	2050-07-15	-	50,000,000,000
Global Bonds	1.95%	2040-07-15	USD 60,000,000	71,130,000,000
9th-1 Korea Resources Corporation Bonds	1.65%	2026-01-08	-	50,000,000,000
9th-2 Korea Resources Corporation Bonds	2.06%	2031-01-08	-	150,000,000,000
9th-3 Korea Resources Corporation Bonds	2.07%	2051-01-06	-	100,000,000,000
Global Bonds	1.75%	2026-04-15	USD 500,000,000	592,750,000,000
10th-1 Korea Resources Corporation Bonds	1.40%	2024-05-17	-	150,000,000,000
10th-2 Korea Resources Corporation Bonds	1.94%	2026-05-18	-	150,000,000,000
Global Bonds (*1)	3.25%	2024-04-17	USD 400,000,000	474,200,000,000
			USD 1,885,000,000 AUD 60,000,000 HKD 500,000,000	4,448,631,331,576
Less: bond discount				(11,149,291,273)
Less: current portion				(593,837,500,000)
Less: current portion of bond discount				205,133,844
				3,843,849,674,147

(*1) The Company provided payment guarantees for the loans payable of MMB (Note 44).

The Company provided loan services, delegated by the Ministry of Trade, Industry and Energy (MTIE), to certain companies engaged in energy and resource businesses in accordance with the Act on the Special Accounts for Energy and Resources. Meanwhile, these services were transferred to Korea Energy Agency in 2017.

20. Borrowings and bonds payable (cont'd)

Details of borrowings received from the "Special Account for Energy and Resources" as of December 31, 2022 and 2021 are as follows (Korean won):

	2022			
	January 1	Borrowings/ Repayment	Exemption	December 31
Overseas resources survey (exploration)	₩ 7,847,668,000	₩ -	₩ -	₩ 7,847,668,000

	2021			
	September 10	Borrowings/ Repayment	Exemption	December 31
Overseas resources survey (exploration)	₩ 7,847,668,000	₩ -	₩ -	₩ 7,847,668,000

21. Trade and other payables

Details of trade and other payables as of December 31, 2022 and 2021 are as follows (Korean won):

	2022		2021	
	Current	Non-current	Current	Non-current
Trade payables	₩ 66,518,792,162	₩ -	₩ 26,720,620,273	₩ -
Other payables	9,209,610,854	-	14,057,402,290	-
Accrued expenses	38,789,365,625	-	31,427,826,503	-
Rental deposit	2,278,236,500	547,069,500	2,311,783,000	547,069,500
Other deposit	1,035,713,169	-	1,035,713,169	-
Lease liabilities	836,498,932	848,197,061	492,751,517	551,100,354
	₩ 118,668,217,242	₩ 1,395,266,561	₩ 76,046,096,752	₩ 1,098,169,854

22. Lease

The Group recognized the cost of ₩1,229,350,053 by classifying the lease contract with less than 12 months of lease as a short-term lease, and recognized the cost of ₩45,217,613 by classifying the lease contract with an underlying asset of less than USD 5,000 as a low-value assets lease.

Details of right-of-use assets as of December 31, 2022 and 2021 are as follows (Korean won):

	2022					
		Acquisition cost		Accumulated depreciation		Book value
Buildings	₩	1,216,504,070	₩	(532,399,159)	₩	684,104,911
Vehicles		1,650,544,492		(787,725,430)		862,819,062
	₩	2,867,048,562	₩	(1,320,124,589)	₩	1,546,923,973

	2021					
		Acquisition cost		Accumulated depreciation		Book value
Buildings	₩	1,054,638,349	₩	(679,338,115)	₩	375,300,234
Vehicles		1,307,643,818		(711,944,416)		595,699,402
Others		6,940,448		(6,940,448)		-
	₩	2,369,222,615	₩	(1,398,222,979)	₩	970,999,636

Changes in right-of-use assets for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

	2022									
		January 1		Acquisitions		Depreciation		Others(*)		December 31
Buildings	₩	375,300,234	₩	638,558,413	₩	(320,699,097)	₩	(9,054,639)	₩	684,104,911
Vehicles		595,699,402		824,869,966		(557,750,306)		-		862,819,062
	₩	970,999,636	₩	1,463,428,379	₩	(878,449,403)	₩	(9,054,639)	₩	1,546,923,973

	2021									
		September 10		Acquisitions		Depreciation		Others(*)		December 31
Buildings	₩	483,714,851	₩	-	₩	(108,883,847)	₩	469,230	₩	375,300,234
Vehicles		542,857,496		251,168,558		(198,326,652)		-		595,699,402
Others		210,315		-		(210,315)		-		-
	₩	1,026,782,662	₩	251,168,558	₩	(307,420,814)	₩	469,230	₩	970,999,636

(*) Others include currency translation.

Maturity analysis of lease liabilities as of December 31, 2022 and 2021 is as follows (Korean won):

		2022		2021
Within 1 year	₩	886,604,802	₩	592,245,718
After 1 year but no later than 5 years		873,867,991		478,522,738
Non-discounted lease fees		1,760,472,793		1,070,768,456
Current value adjustment amount, etc.		(75,776,800)		(26,916,585)
	₩	1,684,695,993	₩	1,043,851,871

22. Lease (cont'd)

Details of lease liabilities as of December 31, 2022 and 2021 are as follows (Korean won):

	2022	2021
Current liabilities	₩ 836,498,932	₩ 492,751,517
Non-current liabilities	848,197,061	551,100,354
	₩ 1,684,695,993	₩ 1,043,851,871

Changes in lease liabilities for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

2022	January 1	Additions	Interest cost	Decrease	Others(*)	December 31
Lease liabilities	₩ 1,043,851,871	₩ 1,463,428,379	₩32,619,493	₩ (851,027,419)	₩ (4,176,331)	₩ 1,684,695,993

2021	September 10	Additions	Interest cost	Decrease	Others(*)	December 31
Lease liabilities	₩ 1,059,068,732	₩ 251,168,558	₩ 8,525,848	₩ (278,289,895)	₩ 3,378,628	₩ 1,043,851,871

(*) Others include currency translation.

The amount recognized in profit or loss by the Group as lessee for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

	2022	2021
Depreciation for right-of-use-assets	₩ 878,449,403	₩ 307,420,814
Interest on lease liabilities	32,619,493	8,525,848
Expenses relating to short-term leases	1,229,350,053	272,862,690
Expenses relating to leases of low-values assets	45,217,613	23,701,154
	₩ 2,185,636,562	₩ 612,510,506

Total cash outflow from leases in the consolidated statements of cash flows for the year ended December 31, 2022 is ₩ 2,125,595,085.

23. Pensions benefits

Defined contribution plans
The Group operates defined contribution plans for eligible employees. A defined contribution is managed separately by the plan's administrator. When employees terminate their employment before benefits have been vested, the Group's obligation to make contributions to the plan decreases on a pro rata basis. Contributions paid by the Group amounted to ₩ 5,528,481,013 for the year ended December 31, 2022.

Defined benefit plans
The Group operates defined benefit plan and the cost of the defined benefit plans has been determined by NH Investment Securities Co., Ltd., an independent actuary. The present value of the defined benefit obligations, current service costs and past service costs are calculated using the projected unit credit method.

The major components of the defined benefit liabilities as of December 31, 2022 and 2021 are as follows (Korean won):

	2022	2021
Present value of defined benefit obligation under the defined benefit pension plan	₩ 20,822,282,415	₩ 24,294,726,697
Fair value of plan assets	(26,105,177,650)	(18,516,032,922)
	(5,282,895,235)	5,778,693,775
Present value of defined benefit liabilities not related to the defined benefit pension plan	6,988,570	67,640,310
	₩ (5,275,906,665)	₩ 5,846,334,085

23. Pensions benefits(cont'd)

Changes in the defined benefit obligation for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

		2022		2021
As of January 1, 2022(September 10, 2021)	₩	24,362,367,007	₩	22,690,758,493
Current service costs		2,376,945,538		712,324,462
Past service costs		477,548,460		-
Interest costs (*1)		671,174,670		197,926,509
Re-measurement loss (gain) on defined benefit obligation		(5,969,569,230)		1,167,100,763
Benefits paid		(1,089,195,460)		(405,743,220)
As of December 31, 2022 (December 31, 2021)	₩	20,829,270,985	₩	24,362,367,007

(*1) In determining the appropriate discount rate, management considers the interest rates of corporate bonds in currencies consistent with the currencies of the post-employment benefit obligation with at least an 'AA+' rating or above, as set by an internationally acknowledged rating agency. The actual rate of discount applied was 5.314% which is calculated based on the maturity of 11.782 years.

Changes in the fair value of plan assets for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

		2022		2021
As of January 1, 2022(September 10, 2021)	₩	18,516,032,922	₩	17,513,159,561
Expected return on plan assets (*1)		467,452,160		143,212,047
Re-measurement loss on plan assets		(254,962,281)		(52,991,706)
Benefits paid		(822,280,357)		(240,346,980)
Employer contribution		8,198,935,206		1,153,000,000
As of December 31, 2022 (December 31, 2021)	₩	26,105,177,650	₩	18,516,032,922

(*1) In determining the appropriate discount rate, management considers the interest rates of corporate bonds in currencies consistent with the currencies of the define benefit plan assets with at least an 'AA+' rating or above, as set by an internationally acknowledged rating agency. The actual rate of discount applied was 5.314% which is calculated based on the maturity of 11.782 year.

Accumulated re-measurement gains and losses on defined benefit plans recognized as other comprehensive income (before tax effect) amounted to ₩6,604,120,804 for the year ended December 31, 2022.

Details of the defined benefit plan recognized in profit or loss for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

		2022		2021
Current service costs	₩	2,376,945,538	₩	712,324,462
Past service costs		477,548,460		-
Interest costs		671,174,670		197,926,509
Expected return on plan assets		(467,452,160)		(143,212,047)
	₩	3,058,216,508	₩	767,038,924

Costs related to the defined benefit plan above were recognized as selling and administrative expenses in the consolidated financial statements.

23. Pensions benefits(cont'd)

Re-measurement gain (loss) recognized as other comprehensive income(loss) are as follows (Korean won):

	2022	2021
Gain (loss) on defined benefit obligation from actuarial valuation	₩ 5,969,569,230	₩ (1,167,100,763)
Difference between expected return on plan assets and actual interest income	(254,962,281)	(52,991,706)
	₩ 5,714,606,949	₩ (1,220,092,469)

Re-measurement gain (loss) recognized in 2022 from actuarial valuation are included as accumulated deficit in the consolidated statements of financial position.

The Group accepted early retirement applications from its employees and provided the early retirement benefits of ₩ 2,170,508,350 for the year ended December 31, 2022.

24. Provisions

Details of provision as of December 31, 2022 and 2021 are as follows (Korean won):

	2022		2021	
	Current	Non-current	Current	Non-current
Provision for employee benefits(*1)	₩ 9,917,540,480	₩ 26,868,280	₩ 7,080,807,580	₩ -
Decommissioning cost(*2)	-	23,279,429,822	-	23,886,300,827
Provision for litigation(*3)	-	5,509,000,630	-	6,857,752,291
Provision for restoration(*4)	-	93,598,466,194	-	68,678,075,055
	₩ 9,917,540,480	₩ 122,413,764,926	₩ 7,080,807,580	₩ 99,422,128,173

(*1) The Group estimates performance-related bonuses based on the business performance and assessment standards. This estimation could be changed.
(*2) The amount is provided with the best estimate to settle the performance obligation to "Forest recovery deposit." The Group's estimated fair value is based on past restoration experience, and it can be affected by many factors, such as the changes in raw material costs and construction methods and others .
(*3) The amount recognized as a provision for litigation is the best estimate of the economic benefit's future outflows which depends on the outcome of the lawsuit.
(*4) The Group estimates recovery expenses expected after the completion of mining on the basis of the best estimation of management. This estimation could be changed due to the change of recovery expenses and the inflation rate.

Changes in provisions for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

	2022				
	January 1	Incurred	Reversed	Others	December 31
Provision for employee benefits	₩ 7,080,807,580	₩ 7,355,948,500	₩ (4,492,347,320)	₩ -	₩ 9,944,408,760
Decommissioning cost	23,886,300,827	-	(606,871,005)	-	23,279,429,822
Provision for litigation	6,857,752,291	4,801,273,910	(6,150,025,571)	-	5,509,000,630
Provision for restoration	68,678,075,055	20,556,816,669	-	4,363,574,470	93,598,466,194
	₩ 106,502,935,753	₩ 32,714,039,079	₩ (11,249,243,896)	₩ 4,363,574,470	₩ 132,331,305,406

	2021				
	September 10	Incurred	Reversed	Others	December 31
Provisions for employee benefits	₩ 5,483,203,970	₩ 1,597,603,610	₩ -	₩ -	₩ 7,080,807,580
Decommissioning cost	24,114,406,978	-	(228,106,151)	-	23,886,300,827
Provision for litigation	-	6,857,752,291	-	-	6,857,752,291
Provisions for restoration	54,621,956,312	13,031,952,584	-	1,024,166,159	68,678,075,055
	₩ 84,219,567,260	₩ 21,487,308,485	₩ (228,106,151)	₩ 1,024,166,159	₩ 106,502,935,753

25. Government grants

When assets are acquired using the government grants, the amount of the grants received is deducted from the acquisition cost of the assets in accordance with Government Accounting Standards.

Details of government grants as of December 31, 2022 and 2021 are as follows (Korean won):

	2022	2021
Cash and cash equivalents	₩ -	₩ 78,990
Land	18,225,413,403	20,010,261,231
Buildings	23,187,963,988	25,191,729,448
Structures	22,329,683,127	24,049,172,866
Machinery	5,891,760,999	4,151,768,042
Vehicles	531,654,765	632,160,520
Others	613,723,777	174,194,627
Construction in process	68,262,000	2,624,873,889
Exploration and evaluation assets	6,316,200	8,929,800
Software	15,276,280,853	15,276,280,853
	₩ 86,131,059,112	₩ 92,119,450,266

Changes in government grants for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

	2022							
	January 1	Receipts	Acquisition of assets	Offset with depreciation, etc.	Disposal	Reflected on profits	Others	December 31
Cash and cash equivalent	₩ 78,990	₩ 241,114,858,186	₩ (587,402,200)	₩ -	₩ -	₩ (240,527,484,986)	₩ (49,990)	₩ -
Land	20,010,261,231	-	-	-	(1,784,847,828)	-	-	18,225,413,403
Buildings	25,191,729,448	-	-	(2,379,950,760)	-	-	376,185,300	23,187,963,988
Structures	24,049,172,866	-	-	(1,719,489,739)	-	-	-	22,329,683,127
Machinery	4,151,768,042	-	103,125,000	(648,732,043)	-	-	2,285,600,000	5,891,760,999
Vehicles	632,160,520	-	-	(100,505,755)	-	-	-	531,654,765
Others	174,194,627	-	484,277,200	(44,748,050)	-	-	-	613,723,777
Construction in process	2,624,873,889	-	-	-	-	-	(2,556,611,889)	68,262,000
Exploration and evaluation assets	8,929,800	-	-	(2,613,600)	-	-	-	6,316,200
Software	15,276,280,853	-	-	-	-	-	-	15,276,280,853
	₩ 92,119,450,266	₩ 241,114,858,186	₩ -	₩ (4,896,039,947)	₩ (1,784,847,828)	₩ {240,527,484,986)	₩ 105,123,421	86,131,059,112

	2021						
	September 10	Receipts	Acquisition of assets	Offset with depreciation, etc.	Reflected on profits	Others	December 31
Cash and cash equivalent	₩ 27,241,999,980	₩ 54,441,651,942	₩ (1,951,285,589)	₩ -	₩ (79,732,287,343)	₩ -	₩ 78,990
Land	20,010,261,231	-	-	-	-	-	20,010,261,231
Buildings	25,912,636,381	-	-	(791,906,933)	-	71,000,000	25,191,729,448
Structures	24,622,336,110	-	-	(573,163,244)	-	-	24,049,172,866
Machinery	3,019,285,311	-	1,300,039,000	(167,556,269)	-	-	4,151,768,042
Vehicles	16,726,733	-	629,000,000	(13,566,213)	-	-	632,160,520
Others	171,286,105	-	17,820,000	(14,911,478)	-	-	174,194,627
Construction in process	2,691,447,300	-	4,426,589	-	-	(71,000,000)	2,624,873,889
Exploration and evaluation assets	15,276,280,853	-	-	-	-	-	15,276,280,853
Software	9,813,000	-	-	(883,200)	-	-	8,929,800
	₩ 118,972,073,004	₩ 54,441,651,942	₩ -	₩ (1,561,987,337)	₩ (79,732,287,343)	₩ -	₩ 92,119,450,266

Government grants reflected on profits for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

	2022	2021
Income recognized	₩ 240,527,484,986	₩ 79,732,287,343
Offset with depreciation	4,896,039,947	1,561,987,337
Gain on disposal of property, plant and equipment	1,784,847,828	-
	₩ 247,208,372,761	₩ 81,294,274,680

25. Government grants (cont'd)

Details of the specific grants business and Changes in specific grants for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Unit: Korean won)

Department	Business name	project	Period	Budget	The year ended December 31, 2022															
					Carried over from prior year	Increase						Decrease						Etc.	Carry over to next year
						Receipt			interest			Execution			Return				
						Self charge	Municipal charge	Government charge	Self charge	Municipal charge	Government charge	Self charge	Municipal charge	Government charge	Self charge	Municipal charge	Government charge		
Ministry of Trade, Industry and Energy	Briquette price support for low- income	Briquette price support for low- income	2021.10.1~ 2023.5.31	23,600,000,000	-	-	-	13,775,000,000	-	-	-	-	-	13,775,000,000	-	-	-	-	9,825,000,000
Ministry of Trade, Industry and Energy	project for coal price stabilization	Coal briquette price subsidy	2022.1.1~ 2022.12.31	61,289,000,000				61,289,000,000	-	-	-	-	-	61,289,000,000					
Ministry of Trade, Industry and Energy	Project for Measures against abandoned mines	Measures for workers Measures for water	2022.1.1~ 2022.12.31	44,848,000,000	-	-	-	44,848,000,000	-	-	-	-	-	44,847,998,808	-	-	1,192	-	-
Ministry of Trade, Industry and Energy	Project for overseas resource research	Infrastructure Overseas research	2022.1.1~ 2022.12.31	1,351,000,000	-	-	-	1,351,000,000	-	-	-	-	-	1,351,000,000	-	-	-	-	-
Ministry of Trade, Industry and Energy	Project for general mining promotion support	Secure mining amount Project for mine security Mine dispute managing Mining advancement	2022.1.1~ 2022.12.31	14,997,000,000	-	-	-	14,997,000,000	-	-	-	-	-	14,997,000,000	-	-	-	-	-
Ministry of Trade, Industry and Energy	Project for management for assets reserved	Management for assets reserved	2022.1.1~ 2022.12.31	1,079,000,000	-	-	-	1,079,000,000	-	-	-	-	-	1,079,000,000	-	-	-	-	-
Total				147,164,000,000	-	-	-	137,339,000,000	-	-	-	-	-	137,338,998,808	-	-	1,192	-	9,825,000,000

Department	Business name	project	Period	Budget	The period from September 10 to December 31, 2021															
					Carried over from prior year	Increase						Decrease						Etc.	Carry over to next year
						Receipt			interest			Execution			Return				
						Self charge	Municipal charge	Government charge	Self charge	Municipal charge	Government charge	Self charge	Municipal charge	Government charge	Self charge	Municipal charge	Government charge		
Ministry of Trade, Industry and Energy	Briquette price support for low- income	Briquette price support for low- income	2021.9.10~ 2022.05.31	28,320,000,000	-	-	-	13,318,180,945	-	-	-	-	-	13,318,180,945	-	-	-	-	-
Ministry of Trade, Industry and Energy	Project for Measures against abandoned mines	Measures for workers Measures for water	2021.9.10~ 2021.12.31	3,173,646,931	-	-	-	3,173,646,931	-	-	28,730	-	-	3,173,646,931	-	-	28,730	-	-
Ministry of Trade, Industry and Energy	Project for overseas resource research	Infrastructure Overseas research	2021.9.10~ 2021.12.31	1,100,997,442	-	-	-	1,100,997,442	-	-	-	-	-	1,100,997,442	-	-	-	-	-
Ministry of Trade, Industry and Energy	Project for general mining promotion support	Secure mining amount Project for mine security Mine dispute managing Mining advancement	2021.9.10~ 2021.12.31	8,917,294,505	-	-	-	8,917,294,505	-	-	-	-	-	8,917,294,505	-	-	-	-	-
Ministry of Trade, Industry and Energy	Project for management for assets reserved	Management for assets reserved	2021.9.10~ 2021.12.31	436,186,370	-	-	-	436,186,370	-	-	-	-	-	436,186,370	-	-	-	-	-
Total				41,948,125,248	-	-	-	26,946,306,193	-	-	28,730	-	-	26,946,306,193	-	-	28,730	-	-

26. Entrusted business

The Group shall carry out entrusted business by "Act on the Prevention and Recovery of Mining Damage," Article 39, paragraph 1, No. 8; the main entrusted business is national R&D trusted from Ministry of Trade, Industry and Energy and carried out by Korea Institute of Energy Technology Evaluation and Planning.

The Group recognized unexecuted entrusted business as deduction of cash and cash equivalents in accordance with "Korean Government-owned public corporation and Quasi-governmental Institutions Accounting Regulation and Standards (Article 44.2)".

Details of unexecuted entrusted business funds as of December 31, 2022 and 2021, are as follows (Unit: Korean won):

		2022		2021
Deduction of cash and cash equivalents	₩	2,391,609,291	₩	2,338,508,922
Deduction of tools and equipment		5,109,350		9,911,174
		2,396,718,641		2,348,420,096

Changes in entrusted business funds during the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Unit: Korean won):

2022		January 1		Receipts		Execution		Depreciation		Return		Others		December 31
Cash and cash equivalent	₩	2,338,508,922	₩	5,154,884,573	₩	(5,017,641,299)	₩	-	₩	-	₩	(84,142,905)	₩	2,391,609,291
Other tangible assets		9,911,174		-		-		(4,801,824)		-		-		5,109,350
	₩	2,348,420,096	₩	5,154,884,573	₩	(5,017,641,299)	₩	(4,801,824)	₩	-	₩	(84,142,905)	₩	2,396,718,641

2021		September 10		Receipts		Execution		Depreciation		Return		Others		December 31
Cash and cash equivalent	₩	1,389,316,945	₩	2,069,773,625	₩	(799,590,619)	₩	-	₩	(57,070,406)	₩	(263,920,623)	₩	2,338,508,922
Other tangible assets		11,607,834		-		-		(1,696,660)		-		-		9,911,174
	₩	1,400,924,779	₩	2,069,773,625	₩	(799,590,619)	₩	(1,696,660)	₩	(57,070,406)	₩	(263,920,623)	₩	2,348,420,096

26. Entrusted business (cont'd)

Entrusted business revenues and costs for the year ended December 31, 2022 and the period from September 10 to December 31, 2021, consist of the following (Unit: Korean won):

	2022			
	Revenue		Expense	
Hwangji-dong, Taebaek-si Urban Regeneration New Deal Project	₩	2,934,999,776	₩	2,934,999,776
Eco Job City Taebaek Cultural Platform		866,387,590		866,387,590
Other business		1,216,253,933		1,216,253,933
	₩	5,017,641,299	₩	5,017,641,299

	2021			
	Revenue		Expense	
Mercury Pollution Recovery Support Project for Mining Areas in Indonesia	₩	327,672,627	₩	327,672,627
Elevated shaft excavation work		377,026,370		229,348,228
Other business		359,062,823		242,569,764
	₩	1,063,761,820	₩	799,590,619

27. Other liabilities

Details of other liabilities as of December 31, 2022 and 2021 are as follows (Korean won):

	2022		2021	
	Current	Non-current	Current	Non-current
Advanced received	₩ 17,169,623,910	₩ -	₩ 7,667,750,968	₩ -
Unearned revenue	-	-	254,135	2,265,859
Withholdings	11,933,997,396	-	3,540,169,076	-
Others	1,817,489,423	2,147,303,894	1,535,320,500	2,133,702,601
	₩ 30,921,110,729	₩ 2,147,303,894	₩ 12,743,494,679	₩ 2,135,968,460

28. Issued capital

Details of issued capital as of December 31, 2022 and 2021 are as follows (Korean won):

	2022			2021		
	Government	Non-government	Total	Government	Non-government	Total
Issued capital	₩ 2,046,061,200,000	₩ 2,700,000,000	₩ 2,048,761,200,000	₩ 1,997,270,200,000	₩ 2,700,000,000	₩ 1,999,970,200,000

29. Accumulated deficit

Details of accumulated deficit as of December 31, 2022 and 2021 are as follows (Korean won):

	2022	2021
Voluntary reserves	₩ -	₩ 17,253,428,441
Undisposed accumulated deficit	(3,715,959,218,980)	(3,773,556,656,676)
	₩ (3,715,959,218,980)	₩ (3,756,303,228,235)

Details of voluntary reserves as of December 31, 2022 and 2021, are as follows (Unit: Korean won):

	2022	2021
Mine closure measures reserves	₩ -	₩ 798,466,331
Mine closure reserve surcharge	-	91,271,965
Additional reserves	-	1,844,966,502
Reserve for warranty obligations	-	14,518,723,643
	-	17,253,428,441

The Group reversed voluntary reserve during the current year.

Changes in accumulated deficit for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

	2022	2021
As of January 1, 2022(September 10, 2021)	₩ (3,773,556,656,676)	₩ (3,809,522,325,257)
Profit (loss) for the period attributable to equity holders of the parent	22,305,268,507	33,040,644,289
Re-measurement of the net defined benefit liability	5,714,606,949	(1,220,092,469)
Changes in retained earnings in equity method	13,312,873,625	4,145,116,761
Reversal of voluntary reserves	16,363,690,145	-
Others	(99,001,530)	-
As of December 31,2022(December 31, 2021)	₩ (3,715,959,218,980)	₩ (3,773,556,656,676)

29. Accumulated deficit(cont'd)

Changes in retained earnings in equity method for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

		2022		2021
As of January 1, 2022(September 10, 2021)	₩	(4,986,939,304)	₩	(9,132,056,065)
Changes for the period		17,034,953,528		6,182,726,197
Tax effect		(3,722,079,903)		(2,037,609,436)
As of December 31, 2022(December 31, 2021)	₩	8,325,934,321	₩	(4,986,939,304)

Changes in re-measurement of the net defined benefit liability for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

		2022		2021
As of January 1, 2022(September 10, 2021)	₩	889,513,855	₩	2,109,606,324
Changes for the period		5,714,606,949		(1,220,092,469)
As of December 31, 2022(December 31, 2021)	₩	6,604,120,804	₩	889,513,855

30. Other components of equity

Details of other components of equity as of December 31, 2022 and 2021 are as follows (Korean won):

		2022		2021
Share of other comprehensive income of associates and joint ventures	₩	166,875,875,115	₩	124,027,075,064
Exchange differences on translation of foreign operations		(239,930,234,524)		(82,781,810,886)
Others		115,452,337,111		49,228,866,003
	₩	42,397,977,702	₩	90,474,130,181

Changes in other components of equity for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

	2022							
		Changes in equity adjustment in equity method		Exchange difference on translation of foreign operation		Others		Total
As of January 1, 2022	₩	124,027,075,064	₩	(82,781,810,886)	₩	49,228,866,003	₩	90,474,130,181
Change		42,848,800,051		(157,148,423,638)		66,223,471,108		(48,076,152,479)
As of December 31, 2022	₩	166,875,875,115	₩	(239,930,234,524)	₩	115,452,337,111	₩	42,397,977,702

	2021							
		Changes in equity adjustment in equity method		Exchange difference on translation of foreign operation		Others		Total
As of September 10, 2021	₩	111,101,421,221	₩	(57,820,682,946)	₩	49,327,867,533	₩	102,608,605,808
Change		12,925,653,843		(24,961,127,940)		(99,001,530)		(12,134,475,627)
As of December 31, 2021	₩	124,027,075,064	₩	(82,781,810,886)	₩	49,228,866,003	₩	90,474,130,181

31. Sales

Details of sales for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

		2022		2021
Revenue from sales of products with customers:	₩	839,166,147,161	₩	202,404,211,578
Mineral revenue		839,166,147,161		202,404,211,578
Revenue from the provision of services		16,093,929,754		4,681,133,017
Rental income		6,234,680,741		1,982,592,811
Commission income		9,396,112,590		2,522,006,505
Inspection fee income		17,503,250		5,472,400
Income from services related to mining pollution		445,633,173		171,061,301
Interest income		13,763,409,250		4,540,353,988
Government grant		240,527,484,986		79,732,287,343
Entrusted business revenue		5,017,641,299		1,063,761,820
Other income		1,156,364		3,000
	₩	1,114,569,768,814	₩	292,421,750,746

32. Selling and administrative expenses

Details of selling and administrative expenses for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

		2022		2021
Payroll	₩	72,384,866,664	₩	19,651,755,743
Pension benefits		8,569,411,421		1,796,147,744
Employee welfare benefits		9,489,944,495		2,868,544,405
Insurance		3,833,275,705		1,014,814,182
Depreciation		26,890,259,232		9,313,259,669
Amortization of intangible assets		1,933,625,909		733,655,044
Bad debt expenses		303,384,850		1,529,363,287
Fees and commission		15,065,926,779		4,604,512,327
Advertising		91,226,389		55,600,000
Training		398,893,849		13,711,836
Car maintenance		1,209,017,431		450,986,238
Printing		226,622,339		146,299,794
Business expenses		411,631,102		86,506,776
Rents		1,381,935,207		506,163,968
Communication		445,979,049		122,777,421
Transportation		4,581,230,771		1,526,856,354
Taxes and dues		4,997,750,774		5,288,286,725
Supplies		1,500,986,791		2,887,189,496
Utilities		1,813,900,288		469,492,005
Repairs and maintenance		4,462,107,387		2,450,659,289
Travel and transportation		1,083,306,471		261,666,447
Uniforms		45,183,090		6,564,580
Research analysis		69,730,599		3,315,089
Association fees		62,021,316		11,137,965
Facility maintenance		1,016,442,208		394,253,279
Others		4,248,408,431		2,209,856,440
	₩	166,517,068,547	₩	58,403,376,103

33. Other income

Details of other income for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

		2022		2021
Reversal of allowance for other doubtful accounts	₩	70,918,200	₩	-
Rental income		2,206,486		628,205
Miscellaneous		-		5,330
	₩	73,124,686	₩	633,535

34. Other expense

Details of other expenses for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

		2022		2021
Provisions for other allowance	₩	4,801,273,910	₩	-
Other bad debt expenses		22,113,417,312		5,122,727,505
Donation		790,268,035		167,970,000
Miscellaneous		693,777		343,947
	₩	27,705,653,034	₩	5,291,041,452

35. Other gain and loss

Details of other gain and loss for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

		2022		2021
Gain on disposal of property, plant and equipment	₩	1,948,071,375	₩	-
Gain on disposal of other non-current assets		248,508,074		1,327,344,119
Miscellaneous gain		6,993,382,221		13,739,582,914
Loss on disposal of property, plant and equipment		(907,097)		-
Loss on disposal of intangible asset		(503,360)		-
Loss on impairment of intangible asset		(1,684,253,686)		-
Miscellaneous loss		(170,888,309)		(254,530,736)
	₩	7,333,409,218	₩	14,812,396,297

36. Finance income

Details of finance income for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

		2022		2021
Interest income	₩	113,667,568,982	₩	31,131,580,818
Gain on disposal of financial		45,889,835		-
Gain on valuation of financial assets at FVTPL		5,300,654,400		3,808,285,600
Gain on valuation of derivatives		-		620,188,519
Gain on disposal of derivatives		1,439,063,681		-
Gain on foreign currency translations		238,171,678,181		54,342,272,084
Gain on foreign currency transactions		25,531,564,380		2,377,594,155
Other finance income		1,077,232,651		352,893,985
	₩	385,233,652,110	₩	92,632,815,161

Details of interest income for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

		2022		2021
Cash and cash equivalents	₩	4,763,926,101	₩	1,247,573,960
Loans		104,494,022,633		28,651,478,672
Securities		2,943,268,812		949,579,812
Others		1,466,351,436		282,948,374
	₩	113,667,568,982	₩	31,131,580,818

37. Finance expense

Details of finance expense for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

		2022		2021
Interest expenses	₩	213,815,662,945	₩	54,922,202,396
Loss on valuation of derivatives		25,996,607,904		3,443,258,635
Loss on settlement of derivatives		92,136,980		305,753,443
Loss on foreign currency translation		165,771,293,216		33,590,276,097
Loss on foreign currency transactions		28,780,412,924		2,782,702,212
Other finance cost		2,690		459,974
	₩	434,456,116,659	₩	95,044,652,757

Details of interest expenses for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

		2022		2021
Interest expenses for economic cooperation	₩	90,510,000	₩	28,020,910
Interest expenses for external borrowings		138,271,817,367		48,734,389,032
Other interest expenses		75,453,335,578		6,159,533,955
Non-operating interest expenses		-		258,499
	₩	213,815,662,945	₩	54,922,202,396

38. Income tax

Details of income tax for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows(Korean won) :

		2022		2021
Current income tax expense	₩	9,025,076,741	₩	(1,073,706)
Changes in temporary difference		12,744,040,194		(17,637,001,895)
Amendment of tax law		(72,598,230,080)		-
Income tax reflected in equity		(3,768,756,458)		(2,038,315,888)
Income tax benefit	₩	(54,597,869,603)	₩	(19,676,391,489)

A reconciliation between income tax expenses and accounting profit (loss) before income tax expenses for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 is as follows (Korean won):

		2022		2021
Profit (loss) before tax	₩	(72,697,770,180)	₩	5,146,057,533
Tax expense (benefit) at the statutory income tax rate		(21,992,103,777)		1,132,132,657
Permanent differences		43,206,106,008		(17,280,760)
Unrecognized deferred tax assets		(3,154,368,821)		(36,967,549,846)
Effect on change in tax rate(*1)		8,625,425,152		-
Amendment of tax law(*2)		(81,223,655,232)		-
Others		(59,272,933)		16,176,306,460
Income tax benefit	₩	(54,597,869,603)	₩	(19,676,391,489)
Effective tax rate (*3)		-		-

(*1) The income tax rate in Korea has decreased by 1%.

(*2) The non-taxable rate of dividend income in Korea has increased

(*3) Effective tax rates for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 were not calculated due to income tax benefit.

Details of income tax reflected in equity for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

		2022		2021
Tax related to other comprehensive income				
Comprehensive income (loss) in investments in associates	₩	(3,768,756,458)	₩	(2,038,315,889)

Changes in deferred tax assets and liabilities for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

	2022					
		January 1		Increase (decrease)		December 31
Deferred taxes on temporary differences:						
Government grants	₩	20,266,279,058	₩	(2,178,756,644)	₩	18,087,522,414
Advanced depreciation provision		(8,340,511,514)		1,290,820,700		(7,049,690,814)
Accumulated depreciation		(11,925,750,165)		887,918,566		(11,037,831,599)
Investments in associates		(128,034,965,575)		87,787,260,901		(40,247,704,674)
Share of other comprehensive income (loss) of associates and joint ventures		2,561,035,415		(2,322,178,770)		238,856,645
Pension benefits		151,318,308		(107,745,652)		43,572,656
Allowance for doubtful accounts		(2,309,727)		2,379,677,811		2,377,368,084
Property, plant and equipment		1,141,213,774		(1,031,732,051)		109,481,723
Others		15,345,459,137		(20,202,622,975)		(4,857,163,838)
		(108,838,231,289)		66,502,641,886		(42,335,589,403)
Unused tax losses		8,526,187,047		(6,382,462,665)		2,143,724,382
	₩	(100,312,044,242)	₩	60,120,179,221	₩	(40,191,865,021)

38. Income tax(cont'd)

	2021		
	September 10	Increase (decrease)	December 31
Deferred taxes on temporary differences:			
Government grants	₩ -	₩ 20,266,279,058	₩ 20,266,279,058
Advanced depreciation provision	-	(8,340,511,514)	(8,340,511,514)
Accumulated depreciation	-	(11,925,750,165)	(11,925,750,165)
Investments in associates	(128,121,999,120)	87,033,545	(128,034,965,575)
Share of other comprehensive income (loss) of associates and joint ventures	3,383,004,238	(821,968,823)	2,561,035,415
Pension benefits	-	151,318,308	151,318,308
Allowance for doubtful accounts	(4,110,575)	1,800,848	(2,309,727)
Property, plant and equipment	1,140,538,920	674,854	1,141,213,774
Others	(3,075,069,713)	18,420,528,850	15,345,459,137
	(126,677,636,250)	17,839,404,961	(108,838,231,289)
Unused tax losses	8,672,571,700	(146,384,653)	8,526,187,047
	₩ (118,005,064,550)	₩ 17,693,020,308	₩ (100,312,044,242)

Among the deductible temporary differences, the details of the amounts for which no deferred tax assets were recognized are as follows (Korean won):

	2022	
	Temporary differences	Deferred tax assets
Investments in associates and subsidiaries	₩ 2,961,713,724,254	₩ 621,959,882,093
Temporary differences of overseas assets account	1,779,387,384,033	387,913,648,237
Unused tax losses	2,512,460,288,653	708,935,354,657
Tax credit	-	28,490,676,372
	₩ 7,253,561,396,940	₩ 1,747,299,561,359

	2021	
	Temporary differences	Deferred tax assets
Investments in associates and subsidiaries	₩ 3,119,156,209,912	₩ 754,835,802,799
Temporary differences of overseas assets account	1,530,326,272,144	373,489,266,042
Unused tax losses	1,901,762,169,486	560,563,244,962
Tax credit	-	23,108,028,927
	₩ 6,551,244,651,542	₩ 1,711,996,342,730

The expiration dates of deferred tax assets due to the unrecognized tax loss carryforwards and tax credits as of December 31, 2022 and 2021 are as follows (Korean won):

	2022		2021	
	Unused tax losses	Tax credit	Unused tax losses	Tax credit
Within 1 year	₩ 2,738,586,765	₩ -	₩ 9,838,837,752	₩ -
1~2 years	63,596,537,340	-	37,900,373,316	-
2~3 years	135,807,787,515	232,683,686	52,378,640,688	-
More than 3 years	506,792,443,037	28,257,992,686	460,445,393,206	23,108,028,927
	₩ 708,935,354,657	₩ 28,490,676,372	₩ 560,563,244,962	₩ 23,108,028,927

39. Expenses by nature

Details of expenses by nature for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

	2022		
	Selling and administrative expenses	Cost of sales	Total
Purchase of goods	₩ -	₩ 857,868,811,716	₩ 857,868,811,716
Mine reclamation costs, etc.	-	1,713,760,392	1,713,760,392
General mine development costs, etc.	-	11,657,627,295	11,657,627,295
Additional costs on loans	-	4,897,632,078	4,897,632,078
Government subsidy agency fees	-	188,980,294,666	188,980,294,666
Entrusted business costs	-	5,017,641,299	5,017,641,299
Changes in inventories	-	(35,280,385,474)	(35,280,385,474)
Payroll	72,384,866,664	-	72,384,866,664
Pension benefits	8,569,411,421	-	8,569,411,421
Employee welfare benefits	9,489,944,495	-	9,489,944,495
Insurance	3,833,275,705	-	3,833,275,705
Depreciation	26,890,259,232	749,187,752	27,639,446,984
Amortization of intangible assets	1,933,625,909	-	1,933,625,909
Bad debt expenses	303,384,850	-	303,384,850
Fees and commission	15,065,926,779	-	15,065,926,779
Advertising	91,226,389	-	91,226,389
Training	398,893,849	-	398,893,849
Car maintenance	1,209,017,431	-	1,209,017,431
Printing	226,622,339	-	226,622,339
Business expenses	411,631,102	-	411,631,102
Rents	1,381,935,207	-	1,381,935,207
Communication	445,979,049	-	445,979,049
Transportation	4,581,230,771		4,581,230,771
Taxes and dues	4,997,750,774	-	4,997,750,774
Supplies	1,500,986,791	-	1,500,986,791
Utilities	1,813,900,288	-	1,813,900,288
Repairs and maintenance	4,462,107,387	-	4,462,107,387
Travel and transportation	1,083,306,471	-	1,083,306,471
Uniforms	45,183,090	-	45,183,090
Research analysis	69,730,599	-	69,730,599
Association fees	62,021,316	-	62,021,316
Facility maintenance	1,016,442,208	-	1,016,442,208
Others	4,248,408,431	-	4,248,408,431
	₩ 166,517,068,547	₩ 1,035,604,569,724	₩ 1,202,121,638,271

39. Expenses by nature(cont'd)

	2021		
	Selling and administrative expenses	Cost of sales	Total
Purchase of goods	₩ -	₩ 215,647,585,083	₩ 215,647,585,083
Mine reclamation costs, etc.	-	1,174,193,623	1,174,193,623
General mine development costs, etc.	-	2,726,834,586	2,726,834,586
Additional costs on loans	-	2,058,580,786	2,058,580,786
Government subsidy agency fees	-	57,015,417,036	57,015,417,036
Entrusted business costs	-	511,976,995	511,976,995
Changes in inventories	-	(22,528,915,368)	(22,528,915,368)
Payroll	19,651,755,743	-	19,651,755,743
Pension benefits	1,796,147,744	-	1,796,147,744
Employee welfare benefits	2,868,544,405	-	2,868,544,405
Insurance	1,014,814,182	-	1,014,814,182
Depreciation	9,313,259,669	14,441,581,707	23,754,841,376
Amortization of intangible assets	733,655,044	324,510,377	1,058,165,421
Bad debt expenses	1,529,363,287	-	1,529,363,287
Fees and commission	4,604,512,327	-	4,604,512,327
Advertising	55,600,000	-	55,600,000
Training	13,711,836	-	13,711,836
Car maintenance	450,986,238	-	450,986,238
Printing	146,299,794	-	146,299,794
Business expenses	86,506,776	-	86,506,776
Rents	506,163,968	-	506,163,968
Communication	122,777,421	-	122,777,421
Transportation	1,526,856,354	-	1,526,856,354
Taxes and dues	5,288,286,725	-	5,288,286,725
Supplies	2,887,189,496	-	2,887,189,496
Utilities	469,492,005	-	469,492,005
Repairs and maintenance	2,450,659,289	-	2,450,659,289
Travel and transportation	261,666,447	-	261,666,447
Uniforms	6,564,580	-	6,564,580
Research analysis	3,315,089	-	3,315,089
Association fees	11,137,965	-	11,137,965
Facility maintenance	394,253,279	-	394,253,279
Others	2,209,856,440	-	2,209,856,440
	₩ 58,403,376,103	₩ 271,371,764,825	₩ 329,775,140,928

40. Assets held-for-sale

Details of assets held-for-sale as of December 31, 2022 and 2021 are as follows(Korean won):

	2022	2021
Land held for sale(*1)	₩ -	₩ 2,157,545,500
Equity investment held for sale(*2, 3)	1,911,110,813	2,947,538,369
	₩ 1,911,110,813	₩ 5,105,083,869

(*1) During current year the Group disposed of the land to Korea District Heating Corporation.
(*2) The Company entered into a contract to sell its equity interest in Korea Alumina, an associate, to KC Co., Ltd. The equity sale is expected to be completed on December 31, 2025. During current year, part of it has been disposed for the amount of ₩896,427,556.
(*3) The Company entered into a contract to sell its equity to three others including YoungWoo Comtech on January 9, 2020, which is expected to be completed on February 28, 2025. During current year, part of it has been disposed for amount of ₩140,000,000.

41. Categories of financial instruments

Details of the book value of current financial assets as of December 31, 2022 and 2021 are as follows (Korean won):

	2022		
	Financial assets at FVTPL	Financial assets at amortized cost	Total
Cash and cash equivalents	₩ -	₩ 320,517,489,394	₩ 320,517,489,394
Short-term loans	-	102,592,318,612	102,592,318,612
Short-term financial instruments	-	54,175,203,635	54,175,203,635
Other financial assets	-	6,547,834,708	6,547,834,708
Trade and other receivables	-	52,790,512,803	52,790,512,803
	₩ -	₩ 536,623,359,152	₩ 536,623,359,152

	2021		
	Financial assets at FVTPL	Financial assets at amortized cost	Total
Cash and cash equivalents	₩ -	₩ 458,170,235,410	₩ 458,170,235,410
Short-term loans	-	110,478,515,298	110,478,515,298
Short-term financial instruments	-	16,790,284,177	16,790,284,177
Other financial assets	-	6,473,051,611	6,473,051,611
Trade and other receivables	-	38,716,285,573	38,716,285,573
	₩ -	₩ 630,628,372,069	₩ 630,628,372,069

41. Categories of financial instruments(cont'd)

Details of the book value of non-current financial assets as of December 31, 2022 are as follows (Korean won):

	2022		
	Financial assets at FVTPL	Financial assets at amortized cost	Total
Financial assets at FVTPL	₩ 19,817,606,930	₩ -	₩ 19,817,606,930
Long-term loans	-	1,229,782,510,178	1,229,782,510,178
Other financial assets	-	89,131,787,486	89,131,787,486
Other receivables	-	12,823,899,837	12,823,899,837
	₩ 19,817,606,930	₩ 1,331,738,197,501	₩ 1,351,555,804,431

	2021		
	Financial assets at FVTPL	Financial assets at amortized cost	Total
Financial assets at FVTPL	₩ 14,517,099,902	₩ -	₩ 14,517,099,902
Long-term loans	-	1,141,091,124,149	1,141,091,124,149
Other financial assets	-	126,832,033,693	126,832,033,693
Other receivables	-	20,864,960,154	20,864,960,154
	₩ 14,517,099,902	₩ 1,288,788,117,996	₩ 1,303,305,217,898

Details of book values of current financial liabilities as of December 31, 2022 and 2021 are as follows (Korean won):

	2022		
	Financial liabilities at FVTPL	Financial liabilities at amortized cost	Total
Trade and other payables	₩ -	₩ 118,668,217,242	₩ 118,668,217,242
Short-term borrowings	-	155,000,000,000	155,000,000,000
Current portion of long-term borrowings	-	987,086,991,884	987,086,991,884
Current portion of long-term bonds payable	-	1,003,230,411,401	1,003,230,411,401
Derivatives liabilities	34,761,401,746	-	34,761,401,746
	₩ 34,761,401,746	₩ 2,263,985,620,527	₩ 2,298,747,022,273

	2021		
	Financial liabilities at FVTPL	Financial liabilities at amortized cost	Total
Trade and other payables	₩ -	₩ 76,046,096,752	₩ 76,046,096,752
Short-term borrowings	-	55,000,000,000	55,000,000,000
Current portion of long-term borrowings	-	1,242,829,093,218	1,242,829,093,218
Current portion of long-term bonds payable	-	593,632,366,156	593,632,366,156
Derivatives liabilities	8,764,793,842	-	8,764,793,842
	₩ 8,764,793,842	₩ 1,967,507,556,126	₩ 1,976,272,349,968

Details of book values of non-current financial liabilities as of December 31, 2022 and 2021 are as follows (Korean won):

	2022	2021
	Financial liabilities at amortized cost	Financial liabilities at amortized cost
Other payables	₩ 1,395,266,561	₩ 1,098,169,854
Long-term borrowings (*1)	1,426,354,679,592	1,209,438,365,617
Bonds payable	3,508,282,475,231	3,843,849,674,147
	₩ 4,936,032,421,384	₩ 5,054,386,209,618

(*1) Long-term borrowings include net borrowings from the "Special Account for Energy and Resources".

41. Categories of financial instruments(cont'd)

Details of gain or loss from financial instruments by categories for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

		2022		2021
Financial assets at FVTPL:				
Loss on valuation of financial assets at FVTPL	₩	5,300,654,400	₩	3,808,285,600
Gain on valuation of derivatives		-		620,188,519
Gain on settlement of derivatives		1,439,063,681		-
Financial assets at amortized cost:				
Interest income		128,508,210,883		36,024,828,791
Bad debt expense		(22,345,883,962)		(6,652,090,792)
Financial liabilities with amortized cost:				
Interest expenses		(213,815,662,945)		(54,922,202,396)
Financial liabilities at FVTPL:				
Loss on valuation of derivatives		(92,136,980)		(305,753,443)
Loss on settlement of derivatives		(25,996,607,904)		(3,443,258,635)
	₩	(127,002,362,827)	₩	(24,870,002,356)

42. Financial risk management

42.1 Financial risk management objectives and policies

The Group is exposed to market risk, credit risk, liquidity risk and capital risk. The Group's senior management oversees the management of these risks so that financial risks are identified, measured and managed in accordance with the Group's policies and risk objectives.

42.2 Market risk

(1) Foreign currency risk
Foreign currency risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in foreign exchange rates. The Group's exposure to the risk of changes in foreign exchange rates relates primarily to the Group's operating activities (when revenue or expense is denominated in a different currency from the Group's presentation currency) and the Group's net investments in foreign subsidiaries.

When the nature of the hedge relationship is not an economic hedge, it is the Group's policy to negotiate the terms of the hedging derivatives to match the terms of the underlying hedge items to maximize hedge effectiveness.

The book value of monetary assets and liabilities which is not denominated in functional currency as of December 31, 2022 and 2021 are as follows (Korean won):

	2022									
		USD		CAD		CNY		Others		Total
Financial assets	₩	2,966,617,443,136	₩	1,043,930,241	₩	28,922,819	₩	178,555,544	₩	2,967,339,488,395
Financial liabilities		(2,020,614,168,609)		-		(5,185,325)		(110,749,555)		(2,020,730,103,489)
	₩	946,003,274,527	₩	1,043,930,241	₩	23,737,494	₩	67,805,989	₩	946,609,384,906

	2021									
		USD		CAD		CNY		Others		Total
Financial assets	₩	2,088,535,211,229	₩	98,200,921,374	₩	11,442,462	₩	160,568,380	₩	2,186,908,143,445
Financial liabilities		(1,895,974,912,473)		-		(36,776,663)		(70,069,526)		(1,896,081,758,662)
	₩	192,560,298,756	₩	98,200,921,374	₩	(25,334,201)	₩	90,498,854	₩	290,826,384,783

42. Financial risk management(cont'd)

The following table demonstrates the sensitivity analysis of a reasonably possible change in the Korean won exchange rate, with all other variables held constant, on the Group's profit (loss) before tax as of December 31, 2022 and 2021 (Korean won):

	2022		2021	
	10% up	10% down	10% up	10% down
Profit (loss) before tax	₩ 94,660,938,491	₩ (94,660,938,491)	₩ 29,082,638,478	₩ (29,082,638,478)

The sensitivity analyses were conducted on monetary assets and liabilities which were denominated in foreign currency other than functional currency at the reporting date.

(2) Interest rate risk
Interest rate risk commonly arises from fluctuations in the future market interest-rate, and mainly involves loans and deposits with floating-rates condition. This can create variables in the interest revenue and interest fee initially promised by loans and deposits. The purpose of the Group's interest rate risk management is to minimize the financial cost and the uncertainty of future changes in interest rates.

The Group manages interest rate risk by preemptively utilizing internal reserves to reduce external borrowings, minimizing the high interest-rate debt proportions, improving short-term and long-term borrowing structure, maintaining appropriate percentage between floating-rate and fixed-rate borrowings, regularly monitoring and implementing domestic and overseas interest-rates trend, and establishing risk countermeasures.

Financial assets and liabilities with floating-rates that are exposed to interest rate risks for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

	2022	2021
Financial assets	₩ 123,306,480,507	₩ 822,138,047,699
Financial liabilities	(871,135,242,349)	(477,453,807,150)
	₩ (747,828,761,842)	₩ 344,684,240,549

The following table demonstrates the sensitivity analysis to a reasonably possible change in interest rates on that portion of borrowings. With all other variables held constant, the effect of changes in interest rates of floating rate borrowings on profit (loss) before tax is as follows (Korean won):

	2022		2021	
	+ 100bp	- 100bp	+ 100bp	- 100bp
Profit (loss) before tax	₩ (7,478,287,618)	₩ 7,478,287,618	₩ 3,446,842,405	₩ (3,446,842,405)

42.3 Credit risk

Credit risk is the risk that a 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 trade and other receivables, bank deposits, derivative assets, payment guarantees.

The Group only transacts with entities that are rated the equivalent of investment grade and above. This information is supplied by independent rating agencies where available and, if not available, the Group uses other publicly available financial information and its own trading records to rate its major customers. The Group's exposure and the credit ratings of its counterparties are continuously monitored and the aggregate value of transactions concluded is spread among approved counterparties.

42. Financial risk management(cont'd)

The Group's financial assets that are exposed to credit risk and the maximum exposure to credit risk at the reporting date is as follows (Korean won):

			2022		2021
Financial assets at amortized cost	Cash and cash equivalents	₩	320,517,489,394	₩	458,170,235,410
	Trade and other receivables		65,614,412,640		59,581,245,727
	Loans		1,332,374,828,790		1,251,569,639,447
	Financial instruments		54,175,203,635		16,790,284,177
	Others		95,679,622,194		133,305,085,304
Financial assets at FVTPL			19,817,606,930		14,517,099,902
		₩	1,888,179,163,583	₩	1,933,933,589,967

Other than the above, the maximum amount of guarantees that the Group has provided to unrelated parties for its performance are disclosed in Note 44.

While the Group establishes an allowance for the trade receivables which is likely to be impaired due to bankruptcy or whose cash flows can be reliably estimated as the trade receivable belongs to a specific project, it determines an allowance for a group of financial assets with similar characteristics based on aging analysis and historical percentage of uncollected trade receivable.

42.4 Liquidity risk

The Group is exposed to liquidity risk that it may face difficulties in settling financial liabilities in cash or with financial assets.

The Group forecasts the cash flow of operation, investment and financial activities on the basis of routinely established plans and responds to financial liabilities and assets. Moreover, the Group secures and sustains required liquidity to manage possible liquidity risks in advance.

The table below summarizes the maturity profile of the Group's major not derivative financial liabilities (Korean won):

	2022							
		Book value		Under 1 year		1 ~ 5 years		Over 5 years
Borrowings	₩	2,568,441,671,476	₩	1,321,130,666,624	₩	1,306,415,071,444	₩	497,088,182,156
Bonds payable		4,511,512,886,632		1,516,367,448,437		2,555,964,848,312		1,293,507,303,558
Trade and other payables		120,063,483,803		118,718,323,112		1,420,937,491		-
	₩	7,200,018,041,911	₩	2,956,216,438,173	₩	3,863,800,857,247	₩	1,790,595,485,714

	2021							
		Book value		Under 1 year		1 ~ 5 years		Over 5 years
Borrowings	₩	2,507,267,458,835	₩	1,360,105,196,260	₩	1,055,570,328,591	₩	394,797,875,062
Bonds payable		4,437,482,040,303		699,219,270,851		3,013,543,211,721		1,255,893,300,912
Trade and other payables		77,144,266,606		76,145,590,953		1,025,592,238		-
	₩	7,021,893,765,744	₩	2,135,470,058,064	₩	4,070,139,132,550	₩	1,650,691,175,974

The maturity profile above is based on the contract amount that is undiscounted (including paid interest) for the earliest maturity date, which leads to a difference between the total and the balance of financial liabilities in the consolidated statement of financial position. In addition to the non-derivative financial liabilities above, the maximum amount of guarantee that the Group would bear due to other financial guarantee given by the Group is disclosed in Note 44.

42. Financial risk management (cont'd)

42.5 Capital risk

The objective of the Group's capital risk management is to secure its ability to provide earnings to its shareholders and interested parties and sustain an optimal capital structure to reduce the cost of capital. In order to sustain optimal capital structure, the Group uses a debt-to-equity ratio similar to other entities in the industry. Debt-to-equity ratio is calculated by dividing total liabilities by total equity.

The Group's debt-to-equity ratio as of December 31, 2022 and 2021 are as follows (Korean won):

	December 31, 2022	December 31, 2021
Total liabilities	₩ 7,449,363,820,278	₩ 7,264,179,408,936
Total equity	(2,254,456,478,685)	(2,218,307,621,640)
Debt ratio	-	-

(*1) Total equity is negative, as such debt-to-equity ratio as of December 31, 2022 and 2021 were not calculated.

42.6 Fair value and book value

Details of fair value and book value of financial asset and liabilities as of December 31, 2022 and 2021 are as follows (Korean won):

	2022	
	Book value	Fair value
Financial assets measured at fair value:		
Financial assets at FVTPL	₩ 19,817,606,930	₩ 19,817,606,930
Financial assets measured at amortized cost:		
Cash and cash equivalents	₩ 320,517,489,394	₩ 320,517,489,394
Short-term loans	102,592,318,612	102,592,318,612
Long-term loans	1,229,782,510,178	1,229,782,510,178
Trade and other receivables	65,614,412,640	65,614,412,640
Short-term financial instruments	54,175,203,635	54,175,203,635
Other financial assets	95,679,622,194	95,679,622,194
	1,868,361,556,653	1,868,361,556,653
Financial liabilities measured at fair value:		
Derivative liabilities	₩ 34,761,401,746	₩ 34,761,401,746
Financial liabilities measured at amortized cost:		
Short-term borrowings	155,000,000,000	155,000,000,000
Current portion of long-term borrowings	987,086,991,884	987,086,991,884
Current portion of payable bonds	1,003,230,411,401	1,003,230,411,401
Long-term borrowings	1,426,354,679,592	1,426,354,679,592
Bonds payable	3,508,282,475,231	3,508,282,475,231
Trade and other payables	120,063,483,803	120,063,483,803
	7,200,018,041,911	7,200,018,041,911

42. Financial risk management (cont'd)

	2021			
	Book value		Fair value	
Financial assets measured at fair value:				
Financial assets at FVTPL	₩	14,517,099,902	₩	14,517,099,902
Financial assets measured at amortized cost:				
Cash and cash equivalents	₩	458,170,235,410	₩	458,170,235,410
Short-term loans		110,478,515,298		110,478,515,298
Long-term loans		1,141,091,124,149		1,141,091,124,149
Trade and other receivables		59,581,245,727		59,581,245,727
Short-term financial instruments		16,790,284,177		16,790,284,177
Other financial assets		133,305,085,304		133,305,085,304
		1,919,416,490,065		1,919,416,490,065
Financial liabilities measured at fair value:				
Derivative liabilities	₩	8,764,793,842	₩	8,764,793,842
Financial liabilities measured at amortized cost:				
Short-term borrowings		55,000,000,000		55,000,000,000
Current portion of long-term borrowings		1,242,829,093,218		1,242,829,093,218
Current portion of payable bonds		593,632,366,156		593,632,366,156
Long-term borrowings		1,209,438,365,617		1,209,438,365,617
Bonds payable		3,843,849,674,147		3,843,849,674,147
Trade and other payables		77,144,266,606		77,144,266,606
		7,021,893,765,744		7,021,893,765,744

42.7 Fair value hierarchy

All assets and liabilities for which fair value is measured or disclosed in the consolidated 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

The following table provides the fair value measurement hierarchy of the Group's financial assets and liabilities as of December 31, 2022 and 2021 (Korean won):

	2022							
	Level 1		Level 2		Level 3		Total	
Financial assets at FVTPL	₩	-	₩	-	₩	19,817,606,930	₩	19,817,606,930
Derivative liabilities	₩	-	₩	34,761,401,746	₩	-	₩	34,761,401,746

	2021							
	Level 1		Level 2		Level 3		Total	
Financial assets at FVTPL	₩	-	₩	-	₩	14,517,099,902	₩	14,517,099,902
Derivative liabilities	₩	-	₩	8,764,793,842	₩	-	₩	8,764,793,842

43. Related party transactions

The related parties of the Group are as follows:

	Name
Parent	The Government of the Republic of Korea
Associates(*)	Philco Resource Ltd., Korean Boleo Corporation on S.A. de C.V., Xian Maxun KORES New Material Co., Ltd., AMSA/DMSA(Ambatovy), ZhangjiagangWonjin-KORES Industrial Material Co., Ltd., ZhangjiagangWonjin-KORES Resources Recovery Reutilization Co., Ltd., Enertech, Haein Resource Corporation, PT. KCT , Mkuju Resources Tanzania Ltd, Springvale SK Kores Pty Ltd. Kangwon Land, Inc., Mungyeong Leisure Town Co., Ltd., Black Valley Country Club Co., Ltd, Kidslala, Inc. Hym-namu Co., Ltd.
Joint venture	Jungchon Natural Graphite Cooperation, Korea Panama Mining Corporation, KLS

Transactions between inter-group entities have been eliminated and details have not been disclosed in the notes to the consolidated financial statements. The transactions between the Group, associates and joint ventures are as follows:

Significant transactions with the related the parties (except finance and equity transactions) for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

		2022		
	Name	Interest income	Commission income	Purchase of goods
Associates	AMSA/DMSA (Ambatovy)	₩ 27,850,944,821	₩ 6,127,076,588	₩ 407,905,945,692
Joint venture	Korea Panama Mining Corporation	70,920,551,324	-	-
		₩ 98,771,496,145	₩ 6,127,076,588	₩ 407,905,945,692

		2021		
	Name	Interest income	Commission income	Purchase of goods
Associates	AMSA/DMSA (Ambatovy)	₩ 8,304,081,542	₩ 1,673,415,549	₩ 126,587,046,569
Joint venture	Korea Panama Mining Corporation	20,347,397,130	-	-
		₩ 28,651,478,672	₩ 1,673,415,549	₩ 126,587,046,569

The outstanding receivables and payables arising from the transactions with the related parties as of December 31, 2022 and 2021 are as follows (Korean won):

		2022					
	Name	Loans (*)	Accrued income (*)	Trade receivables (*)	Other receivables	Trade payables	Other payables
Associates	Haein Resource Corporation	₩ 2,337,356,974	₩ -	₩ 1,512,629,470	₩ -	₩ -	₩ -
	Philco Resource Ltd.	2,777,921,600	80,273,106	-	-	-	-
	Korean Boleo Corporation on S.A de C.V	225,469,456,301	77,740,633,391	467,249,505	-	-	-
	Xian Maxun KORES New Material Co., Ltd.	2,178,972,808	656,378,237	-	-	-	-
	AMSA/DMSA (Ambatovy)	181,458,158,864	3,001,430,998	1,559,252,711	-	32,988,536,603	52,233,582,427
	Enertech	-	-	-	1,490,042,708	-	-
Joint venture	Korea Panama Mining Corporation	795,572,626,496	-	-	-	-	2,127,815,459
		₩ 1,209,794,493,043	₩ 81,478,715,732	₩ 3,539,131,686	₩ 1,490,042,708	32,988,536,603	54,361,397,886

(*) As of December 31, 2022, the Group recognizes allowance for bad debt for loans, accrued income and trade receivables amounting to ₩232,764 million, ₩78,485 million and ₩1,980 million, respectively.

43. Related party transactions(cont'd)

		2021			
	Name	Loans (*)	Accrued income (*)	Trade receivables (*)	Other receivables
Associates	Philco Resource Ltd.	₩ 2,598,616,000	₩ 82,044,803	₩ -	₩ -
	Korean Boleo Corporation on S.A de C.V	210,916,152,801	72,722,734,069	437,959,344	-
	Xian Maxun KORES New Material Co., Ltd.	2,038,327,361	614,011,207	-	-
	AMSA/DMSA (Ambatovy)	145,725,505,985	1,304,797,208	1,451,153,934	-
	ZhangjiagangWonjin-KORES Industrial Material Co., Ltd.	-	-	375,625,350	-
	ZhangjiagangWonjin-KORES Resources Recovery Reutilization Co., Ltd.	-	-	86,706,777	-
	Enertech				1,678,167,708
	Haein Resource Corporation	-	-	1,512,629,470	-
Joint venture	Korea Panama Mining Corporation	729,264,078,841	-	3,498,030,797	-
		₩ 1,090,542,680,988	₩ 74,723,587,287	₩ 7,362,105,672	₩ 1,678,167,708

(*) As of December 31, 2021, the Group recognizes allowance for bad debt for loans and accrued income amounting to ₩217,083 million and ₩73,419 million, respectively.

During the current year, there were no significant financial transactions between the Group and related parties.

Details of guarantees provided to related parties as of December 31, 2022 are summarized in Note 44.

The compensation to management for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as follows (Korean won):

	2022	2021
Short-term employee benefits	₩ 733,598,630	146,176,200

44. Guarantee and collateral assets

Details of guarantees provided as of December 31, 2022 are as follows (Korean won, USD):

Receiver	Provider	Currency	Amount	Reasons	Guarantee date	Guarantee period
MMB	Underwriter of Global Bond payable	USD	400,000,000	Guarantee for the bond	2019.04.17	2019.04.17 ~ 2024.12.17
	Neo Power 3rd, 4th	KRW	290,000,000,000	Guarantee for borrowing	2019.03.07	2019.03.07 ~ 2025.03.11
	National Resources 2nd	KRW	55,000,000,000	Guarantee for borrowing	2020.03.05	2020.03.05 ~ 2023.03.11

Assets that have been pledged as collaterals for others as of December 31, 2022 are as follows:

Provider	Collateral asset	Currency	Amount	Receiver	Reasons
KOMIR	AMSA/DMSA (Ambatovy) Stock	KRW	618,805,521,880	PF Creditor	PF Security

45. Commitment and contingencies

Details of the major financing agreements guaranteed by the Group as of December 31, 2022 are as follows (Korean won, AUD):

Commitments	Financial institutions	Currency	Limit	Outstanding balance
General loans	Hana Bank	KRW	500,000,000	-
CP loans	Hana Bank	KRW	150,000,000,000	-
CP loans	Hana Bank	KRW	100,000,000,000	-
CP loans	Hana Bank	KRW	100,000,000,000	-
CP loans	Hana Bank	KRW	100,000,000,000	-
Working capital facility	Woori Bank	AUD	2,800,000	-

Refinancing commitments

The partners in the Ambatovy Project, including the Group, have provided refinancing commitments to a syndicate of project financing (PF) lending institutions. In the case of the Group receiving an additional request from the Ambatovy Project for refinancing, the Group has a contractual obligation to provide the Ambatovy Project with a loan of up to $149.4 million. For the year ended December 31, 2022, $99.6 million has been lent to the Ambatovy Project in accordance within the commitments.

KAC commitments

The Group has invested in AMSA/DMSA through KAC ("Korea Ambatovy Consortium") with POSCO INTERNATIONAL Corporation and STX Corporation. The operator (SHERRITT INTERNATIONAL Corp.) transferred part of its shares to Sumitomo Corporation and AHL ("Ambatovy Holdings Limited") in November 2017, remaining shares to Sumitomo Corporation and AHL2 ("Ambatovy Holdings Ⅱ Limited") in August 2020. KAC has rights and obligations to the shares held by AHL (10.32%) and AHL2 (5.01%).

46. Litigations

Details of litigations as of December 31, 2022 are as follows (Korean won):

Defendant	Plaintiff	Details	Amount(*1)	Progress
KOMIR	Mr. Park and others	Payment of disaster compensation benefit(*2)	₩ 10,407,607,240	26 litigations, first trial in progress 1, first trial closing 12, second trial in progress 1 , second trial closing 7, third trial in progress
KOMIR	Mr. Keum and others	Claim for coal production reduction subsidy	₩ 2,716,469,518	4, first trial in progress
KOMIR	Mr. Ha and others	Claim for briquette price stabilization subsidy	₩ 150,000,000	3, first trial in progress
KOMIR	Mr. Shin and others	Claim for loss	₩ 261,611,349	3, first trial in progress
KOMIR	Mr. Kim and others	Claim for wage	₩ 459,395,907	1, first trial in progress
KOMIR	Mr. Kang	Claim for closing compensation	₩ 56,355,983	Second trial in progress
KOMIR	TBN Customs Corporation	Claim for return of deposit	18,000,000	First trial in progress
KOMIR	STX Co.,Ltd	Claim for return of investment(*2)	5,400,000,000	First trial in progress

(*1) The Group cannot predict the impact of the outcome on its consolidated financial statements as of December 31, 2022.
(*2) As of December 31, 2022, the Group recognized provision for litigation of ₩5,509 million.

Tax litigation of MMB

MMB received a tax disposition of 5,192 million pesos from the Mexican tax authority(SAT) as a result of a tax audit for the fiscal year 2014, and as of December 31, 2022, MMB has filed an objection to the tax disposition. The amount has not been reflected in the consolidated financial statements for the year since it was determined that it is probable that the entity will prevail. During the current year, MMB requested the Taxpayer Advocate for arbitration regarding tax audits from 2015 to 2018.

46. Litigations (cont'd)

Concession contract of Minera Panama S.A. (the "MPSA")

Korea Panama Mining corporation, the equity investee of the Company, holds a 20% stake to Minera Panama S.A. (the "MPSA"). On September 25, 2018, the Supreme Court of Panama ruled that Law 9, that approved the mining contract, for MPSA was unconstitutional. MPSA understands that the Supreme Court ruling relates to enactment of Law 9 and does not affect the legality of the Concession contract itself. Accordingly, negotiations have been conducted with the Government of Panama to revise the Concession Contract. However, the negotiations with the Government of Panama were unsuccessful and on December 19, 2022, the National Directorate of Mineral Resources of the Ministry of Commerce and Industries("MICI") issued a resolution requiring MPSA to submit a plan to the Government of Panama to suspend commercial operations.

The MPSA subsequently submitted an appeal to the MICI as administrative proceedings. Also, MPSA has initiated an international arbitration process on the existing Concession Contract. Negotiations with the Government of Panama is underway through an available means.

47. Cash flow statement

Significant non-cash transactions for the year ended December 31, 2022 and the period from September 10 to December 31, 2021 are as
follows (Korean won):

	2022	2021
Transfer of current portion of long-term borrowings and bonds payable	₩ 1,798,586,284,172	₩ 245,428,920,570
Share of other comprehensive income of associates and joint ventures	55,075,791,806	11,710,178,020
Transfer to PP&E from construction in progress	27,969,951,550	5,680,566,006
Transfer to loans from accrued interest	50,599,049,257	14,470,022,971
Transfer of current portion of long-term loans	100,828,182,070	51,290,082,730
Transfer to PP&E from investment properties	11,334,355,979	-
Transfer to investment properties from PP&E	15,608,903,172	-
Recognition of provisions for restoration related to PP&E	16,620,890,240	265,026,824

47. Cash flow statement (cont'd)

Details of changes in liabilities arising from financing activities are as follows (Korean won):

	2022						
	January 1	Cash flow from financing activities	Exchange rate fluctuation	Amortization	Transfer	Others	December 31
Short-term borrowings	₩ 55,000,000,000	100,000,000,000	₩ -	₩ -	₩ -	₩ -	155,000,000,000
Current portion of long-term borrowings	1,242,829,093,218	(786,052,323,849)	12,238,745,167	12,715,604,577	505,355,872,771	-	987,086,991,884
Current portion of bonds payable	593,632,366,156	(614,462,750,000)	20,625,250,000	205,133,844	1,003,230,411,401	-	1,003,230,411,401
Current lease liabilities	492,751,517	(672,962,179)	4,139,958	31,214,114	347,781,011	633,574,511	836,498,932
Sub-total	1,891,954,210,891	(1,301,188,036,028)	32,868,135,125	12,951,952,535	1,508,934,065,183	633,574,511	2,146,153,902,217
Long-term borrowings	1,201,590,697,617	676,252,191,790	10,834,147,598	35,185,847,358	(505,355,872,771)	-	1,418,507,011,592
Borrowings from Special Account for Energy and Resources	7,847,668,000	-	-	-	-	-	7,847,668,000
Bonds payable	3,843,849,674,147	522,008,731,015	141,612,785,226	4,041,696,244	(1,003,230,411,401)	-	3,508,282,475,231
Non-Current lease liabilities	551,100,354	(178,065,240)	(8,316,289)	1,405,379	(347,781,011)	829,853,868	848,197,061
Sub-total	5,053,839,140,118	1,198,082,857,565	152,438,616,535	39,228,948,981	(1,508,934,065,183)	829,853,868	4,935,485,351,884
Total	₩ 6,945,793,351,009	₩ (103,105,178,463)	₩ 185,306,751,660	₩ 52,180,901,516	₩ -	₩ 1,463,428,379	₩ 7,081,639,254,101

	2021						
	September 10	Cash flow from financing activities	Exchange rate fluctuation	Amortization	Transfer	Others	December 31
Short-term borrowings	₩ 55,000,000,000	₩ -	₩ -	₩ -	₩ -	₩ -	55,000,000,000
Current portion of long-term borrowings	991,620,317,202	-	2,893,452,662	2,886,402,784	245,428,920,570	-	1,242,829,093,218
Current portion of bonds payable	584,494,182,546	-	8,925,000,000	213,183,610	-	-	593,632,366,156
Current lease liabilities	429,255,890	(135,540,295)	493,167	6,905,072	191,637,683	-	492,751,517
Sub-total	1,631,543,755,638	(135,540,295)	11,818,945,829	3,106,491,466	245,620,558,253	-	1,891,954,210,891
Long-term borrowings	1,431,054,744,455	-	3,382,983,815	12,581,889,917	(245,428,920,570)	-	1,201,590,697,617
Borrowings from Special Account for Energy and Resources	7,847,668,000	-	-	-	-	-	7,847,668,000
Bonds payable	3,809,903,202,889	-	32,820,585,981	1,125,885,277	-	-	3,843,849,674,147
Non-Current lease liabilities	629,812,842	(142,749,600)	2,885,461	1,620,776	(191,637,683)	251,168,558	551,100,354
Sub-total	5,249,435,428,186	(142,749,600)	36,206,455,257	13,709,395,970	(245,620,558,253)	251,168,558	5,053,839,140,118
Total	₩ 6,880,979,183,824	₩ (278,289,895)	₩ 48,025,401,086	₩ 16,815,887,436	₩ -	₩ 251,168,558	₩ 6,945,793,351,009

48. Material uncertainty of going concern

The Group's equity is eroded as it has accumulated deficits of ₩3,715.9 billion as of December 31,2022 and the Group's total liabilities exceed total assets by ₩1,675.9 billion as of December 31, 2022. These conditions indicate the existence of a material uncertainty that may cast significant doubt on the Group's ability to continue as a going concern. The classification and presentation of assets and liabilities and related adjustments to profit or loss that may result from such uncertainty casting significant doubt on the Group's ability to continue as a going concern, have not been reflected in the consolidated financial statements.

The Group intends to repay bonds and borrowings that are due within the next year by issuing new bonds within the bond issuance limit. Any additional necessary funds will be raised through borrowings and the issuance of long term corporate bills.

The Group's ability to continue as a going concern is dependent upon the results of the measures taken by the government for Korea Mine Rehabilitation and Mineral Resources Corporation.