Your Dreams, Our Challenge

Financial Review 2022

For the Year Ended December 31, 2022

CONTENTS

CONSOLIDATED ELEVEN-YEAR SUMMARY

AGC Inc. and Consolidated Subsidiaries
For the years ended December 31

(Unit: Millions of yen)

	Note	2022/12	2021/12	2020/12	2019/12
Operating Results					
Net sales		**¥2,035,874**	¥1,697,383	¥1,412,306	¥1,518,039
Operating profit		**183,942**	206,168	75,780	101,624
Profit before tax		**58,512**	210,045	57,121	76,213
Profit (loss) for the year attributable to owners of the parent		**(3,152)**	123,840	32,715	44,434
Segment Information					
Sales to external customers					
Glass Operations		**¥ 900,354**	¥ 732,230	¥ 648,394	¥ 740,920
Electronics Operations		**304,918**	303,049	283,025	265,215
Chemicals Operations		**793,159**	629,487	449,739	474,417
Ceramics/Other Operations		**37,442**	32,615	31,145	37,485
Financial Position					
Total assets		**¥2,814,029**	¥2,666,031	¥2,534,458	¥2,335,415
Total current assets		**1,063,009**	915,271	860,962	742,612
Property, plant and equipment		**1,350,769**	1,323,868	1,246,885	1,177,691
Total current liabilities		**669,999**	599,408	563,898	482,490
Total equity/Total net assets		**1,585,590**	1,481,380	1,243,039	1,282,636
Non-controlling interests in consolidated subsidiaries		**195,335**	167,219	127,897	125,538
Per Share Data (Yen)					
Basic — EPS	2	**¥ (14.22)**	¥ 559.11	¥ 147.84	¥ 200.85
Diluted — EPS	3	**(14.22)**	557.10	147.24	199.95
Cash dividends		**210.00**	210.00	120.00	120.00
Equity/Net assets	5	**6,271.35**	5,930.27	5,038.52	5,229.58
Other Data					
Return on equity (ROE)	6	**–0.2%**	10.2%	2.9%	3.9%
Interest-bearing debt	7	**¥ 650,242**	¥ 603,194	¥ 787,960	¥ 602,843
Depreciation and amortization		**185,656**	166,756	143,716	143,361
Capital expenditures		**236,553**	216,503	241,348	207,661
Research and development expenses		**52,252**	49,444	46,444	47,450
Number of shares issued and outstanding (Thousands of shares)	8	**227,441**	227,441	227,441	227,441
Number of employees		**57,609**	55,999	56,179	55,598

Notes: 1. The Company maintains its accounting records in Japanese yen. The U.S. dollar amounts included in this consolidated eleven-year summary represent the arithmetical results of translating Japanese yen to U.S. dollars on the basis of ¥132.70=US$1.00, the approximate exchange rate as of December 31, 2022. The inclusion of such U.S. dollar amounts is solely for convenience and is not intended to imply that Japanese yen amounts have been or could be converted, realized or settled in U.S. dollars at ¥132.70=US$1.00 or at any other rate.

2. Based on profit for the year attributable to owners of the parent. Effective July 1, 2017, the Company consolidated its common shares at a ratio of five shares to one share. Basic earnings per share is calculated on the assumption that the consolidation of shares has been conducted at the beginning of the preceding fiscal year.

3. Based on profit for the year attributable to owners of the parent. Effective July 1, 2017, the Company consolidated its common shares at a ratio of five shares to one share. Diluted earnings per share is calculated on the assumption that the consolidation of shares has been conducted at the beginning of the preceding fiscal year.

(Unit: Millions of yen) (Unit: Thousands of U.S. dollars)

2018/12	2017/12	2016/12	2015/12	2014/12	2013/12	2012/12	2022/12
¥1,522,904	¥1,463,532	¥1,282,570	¥1,326,293	¥1,348,308	¥1,320,006	¥1,189,952	**$15,341,929**
120,555	119,646	96,292	71,172	62,131	79,894	101,751	**1,386,149**
128,404	114,424	67,563	84,522	41,163	44,381	74,998	**440,934**
89,593	69,225	47,438	42,906	15,913	16,139	48,433	**(23,753)**
¥ 756,160	¥ 733,953	¥ 679,071	¥ 691,411	¥ 684,607	¥ 664,239	¥ 562,140	**$ 6,784,883**
250,285	260,626	257,069	286,858	317,378	334,710	341,407	**2,297,800**
482,097	435,145	314,392	315,636	314,694	287,960	254,086	**5,977,084**
34,361	33,807	32,037	32,388	31,628	33,096	32,316	**282,155**
¥2,235,776	¥2,228,560	¥1,981,451	¥1,991,262	¥2,077,338	¥2,120,629	¥1,916,394	**$21,205,946**
733,196	722,522	673,436	637,546	627,178	682,179	638,873	**8,010,618**
1,108,934	1,060,601	937,869	982,296	1,066,193	1,059,946	956,806	**10,179,118**
463,098	455,288	377,490	346,157	355,999	448,018	368,852	**5,048,975**
1,253,604	1,289,895	1,168,743	1,163,767	1,180,490	1,145,145	960,747	**11,948,681**
116,399	105,860	73,305	69,594	67,364	57,929	52,443	**1,472,005**
¥ 399.51	¥ 302.12	¥ 205.14	¥ 37.12	¥ 13.77	¥ 13.97	¥ 41.90	**$ (0.11)**
397.58	300.65	204.26	36.97	13.58	13.73	39.45	**(0.11)**
115.00	(Note 4)	18.00	18.00	18.00	18.00	26.00	**1.58**
5,141.43	5,239.70	4,736.59	946.48	963.04	940.69	786.01	**47.26**
7.7%	6.1%	4.3%	3.9%	1.4%	1.6%	5.8%	**–0.2%**
¥ 541,780	¥ 489,085	¥ 433,968	¥ 468,733	¥ 499,257	¥ 575,014	¥ 538,600	**$ 4,900,090**
121,668	128,226	121,803	137,381	137,199	135,751	117,856	**1,399,066**
230,598	165,095	126,025	125,103	118,169	138,480	155,329	**1,782,615**
45,755	43,912	39,212	38,927	44,758	46,882	47,074	**393,760**
227,441	235,177	1,186,705	1,186,705	1,186,705	1,186,705	1,186,705	**227,441**
54,101	53,224	50,963	50,852	51,114	51,448	49,961	**57,609**

4. Effective July 1, 2017, the Company consolidated its common shares at a ratio of five shares to one share. For fiscal year 2017, the interim dividends per share were ¥10.00 which was before taking into account the consolidation of shares, and the scheduled year-end dividends per share were ¥55.00 which was after taking into account the consolidation of shares.
5. Based on equity attributable to owners of the parent. Effective July 1, 2017, the Company consolidated its common shares at a ratio of five shares to one share. Equity attributable to owners of the parent per share is calculated on the assumption that the consolidation of shares has been conducted at the beginning of the preceding fiscal year.
6. Return on equity attributable to owners of the parent.
7. Interest-bearing debt comprises short-term bank loans, long-term bank loans due within one year, commercial paper, bonds, long-term bank loans, and lease obligations.
8. Effective July 1, 2017, the Company consolidated its common shares at a ratio of five shares to one share. The number of shares issued and outstanding is calculated on the assumption that the consolidation of shares has been conducted at the beginning of the current fiscal year.

The discussion and analysis herein of sales and operating profit are based on reportable segment information. Sales for reportable segments include all inter-segment transactions.

Scope of Consolidation

Number of consolidated subsidiaries: 201
Major subsidiaries:
AGC Techno Glass Co., Ltd., Ise Chemicals Corporation, AGC Glass Europe, AGC Flat Glass North America, Inc.

Currency Fluctuations

The Japanese yen weakened against the U.S. dollar and the euro during fiscal year 2022. The year-end yen-U.S. dollar rate was ¥132.70=US$1.00, compared with ¥115.02=US$1.00 in fiscal year 2021, and the year-end yen-euro rate was ¥141.47=€1.00, compared with ¥130.51=€1.00 in the previous fiscal year.

Overview of the Period Ended December 31, 2022

■ Overview

During the fiscal year ended December 31, 2022, the global economy surrounding the AGC Group continued to see a resumption in economic activities as movement and other restrictions caused by the COVID-19 pandemic were eased in many countries. However, the growth rate of the global economy slowed due to the impact of rising energy prices caused by the situation in Russia and Ukraine, global monetary tightening aimed at curbing inflation, and suppression of economic activity due to the re-spread of COVID-19 in China.

The AGC Group formulated the long-term management strategy "Vision 2030" in February 2021. Under the strategy, the Group aims to create sustainable economic and social value by transforming our "core businesses," which form a solid and long-term stable earnings base, and "strategic businesses," which are high-growth fields, to optimal business portfolios playing an integral role. To ensure the realization of the long-term management strategy Vision 2030, the Group formulated a medium-term management plan AGC plus-2023 for the period from January 1, 2021 to December 31, 2023. The key strategies under the plan are further pursuit of ambidextrous management to deepen core businesses and explore strategic businesses, promotion of sustainability management, and gaining competitiveness by accelerating digital transformation.

During the fiscal year ended December 31, 2022 (January 1, 2022 to December 31, 2022), in strategic businesses the AGC Group decided to increase the production capacity of photomask blanks for EUV exposure in Japan, and also decided to increase the production capacity of synthetic drug CDMO at its site in Spain and gene and cell therapy CDMO at its base in the United States. In core businesses, the Group decided to strengthen the chlor-alkali business base in Southeast Asia by consolidating and reorganizing the three chlor-alkali businesses on the Indochina Peninsula and increase production capacity in Thailand. At the same time, the Group completed its withdrawal from the North American architectural glass business by transferring its shares in Solvay Soda Ash Joint Venture and Solvay Soda Ash Extension Joint Venture, both of which are U.S. manufacturers and distributors of soda ash. In addition, the Group's business portfolio is being steadily transformed into an optimal one by deciding to sell the Group's stake in Chinese subsidiary, AGC Flat Glass (Dalian) Inc., among other measures.

In this business environment, in strategic businesses, the performance of life science products and electronics products expanded steadily. In core businesses, the market for chlor-alkali and urethane, including caustic soda, was strong in the first half of the fiscal year. In architectural glass, sales prices rose mainly in Europe. In the automotive glass business, automobile production recovered moderately due to the easing of the impact from the shortage of parts supplies, mainly semiconductors, and AGC Group's shipments also rose. Furthermore, sales prices rose mainly in Europe. In fluorine and specialty products, shipments of fluorine-related products increased, mainly for semiconductor-related applications. On the other hand, shipments of glass for displays decreased, but sales increased in core businesses as a whole.

As a result, net sales amounted to ¥2,035.9 billion, up ¥338.5 billion, or a 19.9% increase, from the previous fiscal year partly due to the impact of foreign exchange rates. Operating profit decreased by ¥22.2 billion, or a 10.8% decrease, to ¥183.9 billion due to higher prices for raw materials, fuel, and electric power in all businesses, as well as a significant decrease in demand for LCD glass substrates. Profit before tax decreased by ¥151.5 billion, or a 72.1% decrease, to ¥58.5 billion due to impairment losses in the display business, printed circuit board materials business, architectural and automotive glass business in Russia, and the automotive glass business in Europe (excluding Russia). Profit for the year attributable to owners of the parent decreased by ¥127.0 billion to a loss of ¥3.2 billion, compared with ¥123.8 billion in the previous fiscal year.

■ Consolidated Net Sales

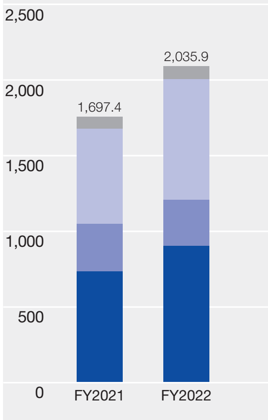
Consolidated net sales were ¥2,035.9 billion in fiscal year 2022.

By reportable segment, the Glass Operations recorded sales of ¥901.5 billion in the fiscal year ended December 31, 2022. In the category of architectural glass, shipments increased in Japan and Asia regions as demand recovered, but declined in Europe and South America, which were affected by the economic slowdown. Sales prices rose in all regions, mainly in Europe, on the back of high prices of raw materials and fuel. Although the Group transferred the architectural glass business in North America in August 2021, in addition to the above revenue increase factors, the impact of foreign exchange rates also contributed to the increase, and sales of architectural glass increased compared to the previous fiscal year. In the automotive glass business, automobile production recovered moderately due to the easing of the impact from the shortage of parts supplies, mainly semiconductors, and AGC Group's shipments also rose. Sales increased from the previous fiscal year due to higher sales prices mainly in Europe and the impact of foreign exchange rates.

Sales in the Electronics Operations were ¥307.2 billion. Demand for LCD glass substrates decreased more than expected from the second half of the fiscal year. Sales decreased significantly from the previous fiscal year due to a decrease in shipments of special glass for displays. Sales of electronics materials increased from the previous fiscal year due to firm shipments of optoelectronics materials and semiconductor-related products, as well as the impact of foreign exchange rates.

Sales in the Chemicals Operations were ¥795.2 billion. Sales of chlor-alkali and urethane increased from the previous fiscal year due to strong market conditions for caustic soda and the impact of foreign exchange rates. In fluorine and specialty chemicals, sales increased from the previous fiscal year due to a large increase in shipments of fluorine-related products, mainly for semiconductor-related application. In the life science category, sales increased from the previous fiscal year due to an increase in contracts for synthetic pharmaceuticals, agrochemicals, and biopharmaceuticals.

Sales by Reportable Segment
(Billions of yen)

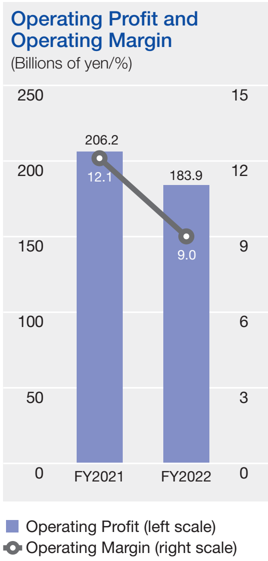


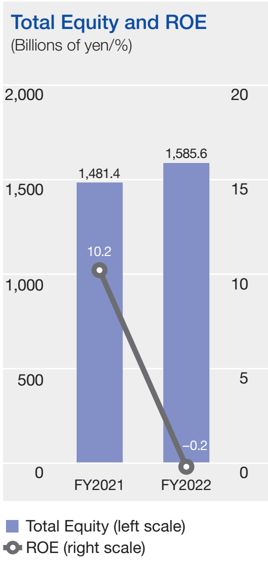
Sales by Reportable Segment

(Unit: Millions of yen)

	FY2021	FY2022
Glass Operations	¥734,257	¥ 901,528
Electronics Operations	304,969	307,212
Chemicals Operations	630,792	795,187
Ceramics/Other Operations	79,392	86,602
Corporate or Elimination	(52,028)	(54,656)
Net sales	¥1,697,383	¥2,035,874

Note: Due to a change of corporate structure, the Company amended the reportable segment of cover glass for car-mounted displays from the Electronics and Glass segments to the Glass segment in FY2022. Segment information in FY2021 is based on the classification of reportable segments in FY2022.





Profit and Expenses

Cost of sales increased by ¥322.1 billion or 27.2% to ¥1,506.5 billion from the previous fiscal year. The cost-to-sales ratio stood at 74.0%.

Cost of Sales and SG&A Expenses

(Unit: Millions of yen)

	FY2021	FY2022
Cost of sales	¥1,184,383	**¥1,506,492**
Cost-to-sales ratio	69.8%	**74.0%**
Gross profit	512,999	**529,381**
SG&A expenses	309,123	**346,675**
SG&A expenses as a percentage of net sales	18.2%	**17.0%**

Operating profit, the net result of gross profit minus selling, general and administrative (SG&A) expenses and share of profit of associates and joint ventures accounted for using equity method, was ¥183.9 billion, down ¥22.2 billion or 10.8% year on year. The operating margin decreased from 12.1% to 9.0%.

Other expenses were ¥153.9 billion, compared with ¥52.6 billion in fiscal year 2021. Impairment losses of ¥128.4 billion, expenses for restructuring programs of ¥9.6 billion and losses on disposal of non-current assets of ¥8.6 billion were recorded. In addition, the Group recorded a foreign exchange loss, net of ¥4.0 billion, compared to a ¥11.0 billion foreign exchange gain in the previous fiscal year.

Profit before tax decreased by ¥151.5 billion, or a 72.1% decrease, to ¥58.5 billion.

Consequently, profit for the year attributable to owners of the parent was a loss of ¥3.2 billion, down ¥127.0 billion from ¥123.8 billion in the previous fiscal year. Basic earnings per share decreased from ¥559.11 to a loss of ¥14.22. ROE decreased by 10.4 percentage points to –0.2%.

Profit

(Unit: Millions of yen)

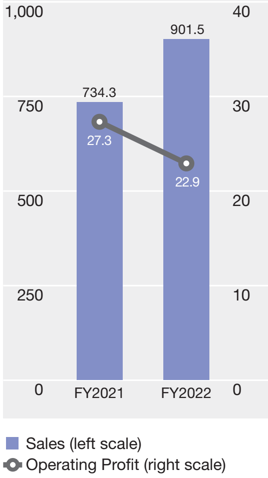
	FY2021	FY2022
Operating profit	¥206,168	**¥183,942**
Operating margin	12.1%	**9.0%**
Profit before tax	210,045	**58,512**
Profit (loss) for the year attributable to owners of the parent	123,840	**(3,152)**
Percentage of net sales	7.3%	**–0.2%**
Per share data (Yen)		
—Net income—basic	559.11	**(14.22)**
—Net income—diluted	557.10	**(14.22)**
Return on equity (ROE)	10.2%	**–0.2%**

Performance by Reportable Segment

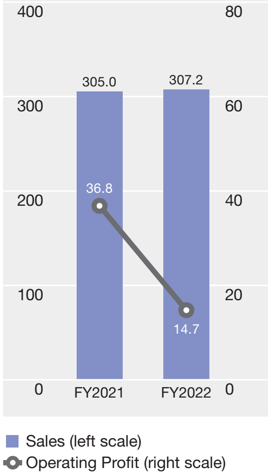
Glass Operations

In the category of architectural glass, shipments increased in Japan and Asia regions as demand recovered, but declined in Europe and South America, which were affected by the economic slowdown. Sales prices rose in all regions, mainly in Europe, on the back of high prices of raw materials and fuel. Although the Group transferred the architectural glass business in North America in August 2021, in addition to the above revenue increase factors, the impact of foreign exchange rates also contributed to the increase, and sales of architectural glass increased compared to the previous fiscal year. In the automotive glass business, automobile production recovered moderately due to the easing of the impact from the shortage of parts supplies, mainly semiconductors, and AGC Group's shipments also rose. Sales increased from the previous fiscal year due to higher sales prices mainly in Europe and the impact of foreign exchange rates.

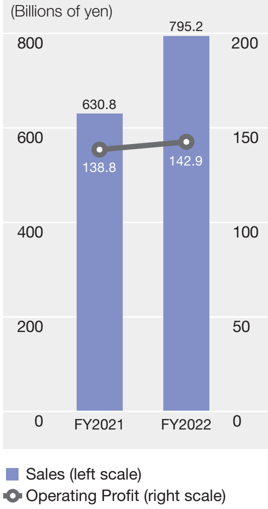
Sales and Operating Profit of Glass Operations
(Billions of yen)



Sales and Operating Profit of Electronics Operations
(Billions of yen)



Sales and Operating Profit of Chemicals Operations
(Billions of yen)



As a result, net sales from Glass Operations for the fiscal year were ¥901.5 billion, up ¥167.3 billion, or a 22.8% increase, from the previous fiscal year. Operating profit decreased by ¥4.4 billion, or a 16.2% decrease, from the previous fiscal year to ¥22.9 billion due to the impact of higher natural gas prices in Europe.

■ Electronics Operations

Demand for LCD glass substrates decreased more than expected from the second half of the fiscal year. Sales decreased significantly from the previous fiscal year due to a decrease in shipments of special glass for displays. Sales of electronics materials increased from the previous fiscal year due to firm shipments of optoelectronics materials and semiconductor-related products, as well as the impact of foreign exchange rates.

As a result, net sales from Electronics Operations for the fiscal year were ¥307.2 billion, up ¥2.2 billion, or a 0.7% increase, from the previous fiscal year. Operating profit was ¥14.7 billion, down ¥22.1 billion, or a 60.1% decrease from the previous fiscal year, owing to a significant decrease in demand for glass substrates for LCDs, an increase in depreciation costs associated with the start-up of new facilities, and high raw material and fuel costs, despite the foregoing factors underlying the increase in sales.

■ Chemicals Operations

Sales of chlor-alkali and urethane increased from the previous fiscal year due to strong market conditions for caustic soda and the impact of foreign exchange rates. In fluorine and specialty chemicals, sales increased from the previous fiscal year due to a large increase in shipments of fluorine-related products, mainly for semiconductor-related application. In the life science category, sales increased from the previous fiscal year due to an increase in contracts for synthetic pharmaceuticals, agro-chemicals, and biopharmaceuticals.

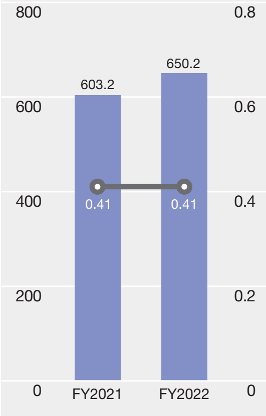
As a result, net sales from Chemical Products for the fiscal year were ¥795.2 billion, up ¥164.4 billion, or a 26.1% increase, from the previous fiscal year. Operating profit increased by ¥4.2 billion, or a 3.0% increase, from the previous fiscal year to ¥142.9 billion.

Sales and Operating Profit by Reportable Segment

(Unit: Millions of yen)

	FY2021	**FY2022**
Glass Operations		
Sales	¥734,257	**¥901,528**
Operating profit	27,324	**22,893**
Operating margin	3.8%	**2.5%**
Electronics Operations		
Sales	304,969	**307,212**
Operating profit	36,785	**14,677**
Operating margin	12.1%	**4.8%**
Chemicals Operations		
Sales	630,792	**795,187**
Operating profit	138,756	**142,944**
Operating margin	22.0%	**18.0%**

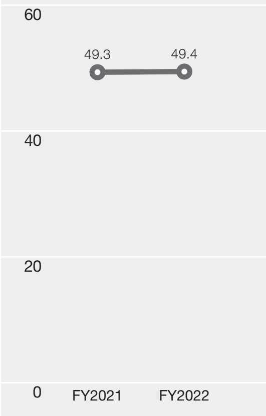
Interest-Bearing Debt and Debt-to-Equity Ratio
(Billions of yen/Times)



Interest-Bearing Debt (left scale)
Debt-to-Equity Ratio (right scale)

* Debt-to-Equity Ratio = Interest-Bearing Debt/Total Equity

Equity Attributable to Owners of the Parent Ratio
(%)



Assets, Liabilities and Equity

We continue to adhere to a policy of maintaining appropriate liquidity, securing the funds necessary to conduct our operations and ensuring the soundness of our balance sheet. With the aim of facilitating the stable procurement of long-term funds, we have obtained an A– rating from Standard & Poor's, an A2 rating from Moody's Investors Service and an AA– rating from Rating and Investment Information, Inc.

Total assets as of the end of the fiscal year were ¥2,814.0 billion, up ¥148.0 billion from the end of the previous fiscal year. This increase was mainly due to an increase in inventories.

Total liabilities as of the end of the fiscal year were ¥1,228.4 billion, up ¥43.8 billion from the end of the previous fiscal year. This increase was mainly due to an increase in interest-bearing debt.

Total equity as of the end of the fiscal year was ¥1,585.6 billion, up ¥104.2 billion from the end of the previous fiscal year. This increase was mainly due to an increase in exchange differences on translation of foreign operations affected by the depreciation of the yen compared to the end of the previous fiscal year.

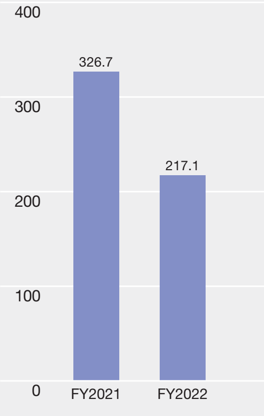
As a consequence of the above, the equity attributable to owners of the parent ratio for fiscal year 2022 increased by 0.1 percentage points from 49.3% to 49.4%. Equity attributable to owners of the parent per share increased from the previous fiscal year to ¥6,271.35.

Summary of Assets, Liabilities and Equity

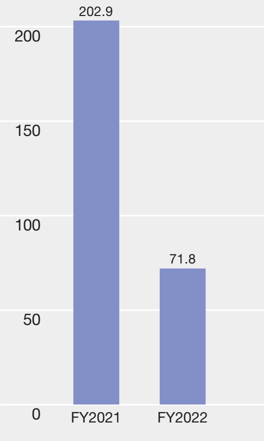
(Unit: Millions of yen)

	FY2021	**FY2022**
Total assets	¥2,666,031	**¥2,814,029**
Total current assets	915,271	**1,063,009**
Inventories	330,101	**436,516**
Property, plant and equipment	1,323,868	**1,350,769**
Total current liabilities	599,408	**669,999**
Interest-bearing debt	603,194	**650,242**
Total equity	1,481,380	**1,585,590**
Equity attributable to owners of the parent ratio	49.3%	**49.4%**
Equity attributable to owners of the parent per share (Yen)	5,930.27	**6,271.35**
Debt-to-equity ratio (Times)	0.41	**0.41**

Net Cash from Operating Activities
(Billions of yen)



Free Cash Flow
(Billions of yen)



Cash Flows

The free cash flow for the fiscal year, which is the sum of cash flows from operating activities and investing activities, was ¥71.8 billion (positive ¥202.9 billion in the previous fiscal year) mainly due to profit before tax and proceeds from sale of other financial assets. On the other hand, there were repayment of interest-bearing debt and payment of dividends in cash flows from financing activities. Cash & cash equivalents as of the end of the period (net cash) increased ¥13.9 billion or 7.1% from the end of the previous fiscal year to ¥209.7 billion.

■ Cash Flows from Operating Activities

Net cash from operating activities for the fiscal year was ¥217.1 billion, down ¥109.6 billion or 33.5% from the previous fiscal year.

■ Cash Flows from Investing Activities

Net cash used in investing activities for the fiscal year was ¥145.3 billion, up ¥21.5 billion or 17.4% from the previous fiscal year. This expenditure was mainly due to purchase of property, plant and equipment.

■ Cash Flows from Financing Activities

Net cash used in financing activities for the fiscal year was ¥78.2 billion, down ¥174.1 billion or 69.0% from the previous fiscal year. This expenditure was mainly due to repayment of interest-bearing debt and payment of dividends.

Summary of Cash Flow Statements

(Unit: Millions of yen)

	FY2021	FY2022
Net cash from operating activities	¥ 326,713	**¥ 217,146**
Profit before tax	210,045	**58,512**
Depreciation and amortization	166,756	**185,656**
Net cash from investing activities	(123,787)	**(145,312)**
Purchase of property, plant and equipment and intangible assets	(210,572)	**(223,921)**
Free cash flow	202,926	**71,834**
Net cash from financing activities	(252,259)	**(78,206)**
Effect of exchange rate changes on cash and cash equivalents	9,039	**20,257**
Net increase (decrease) in cash and cash equivalents	(40,294)	**13,885**
Cash and cash equivalents at beginning of year	236,124	**195,830**
Cash and cash equivalents at end of year	195,830	**209,716**

Business Risks

Set out below are risks associated with the Group's operations and other risks that may materially influence the decisions of investors to invest in the Group. However, this section does not include all possible risks relating to the Group; there may exist additional risks not stated below. Any such risks are also likely to influence investors' decisions.

Having identified these risks, the Group has established the AGC Group Enterprise Risk Management Basic Policies, which define the Group's basic policies concerning risk management, and has formulated a system for risk management and crisis response.

Forward-looking statements in this section are based on information available as of March 30, 2023.

(1) Economic conditions in markets in which the Group's products are sold

Demand for the Group's products is impacted by trends in industries such as construction and building materials, automobiles, electronics, displays, and chemicals. The Group's products are supplied throughout the world, for example in Asia, the United States and Europe, as well as in Japan, and sales are therefore influenced by local economic conditions. Although the Group is working hard to build an earnings structure that is resilient to changes in the business environment by improving productivity and reducing fixed and variable costs, through falling sales volumes and prices, its performance and financial position are susceptible to declining demand from the industries as well as economic downturns in the regions where its products are primarily sold.

The situation in each segment is as follows.

1) Architectural Glass

In the Architectural Glass segment, the Group has established development and production bases in Japan/Asia, Europe and the Americas and supplies products throughout the world. Demand for architectural glass is correlated with construction investment, which varies with economic conditions in each region and country. Accordingly, earnings in this business could be impacted by fluctuations in demand for architectural glass.

2) Automotive

In the Automotive segment, demand for automotive glass is influenced by automobile sales volume, which is correlated with factors such as economic fluctuations in each region and country. Accordingly, earnings in this business could be impacted by fluctuations in demand for automotive glass.

3) Electronics

Products in the display business are used in LCD TVs, smartphones, and tablets, etc. In the LCD glass substrate business, changes in the market shares of panel manufacturers, which are the Group's customers, shifts in market trends, and other developments are expected to occur. The Group has been working to expand sales based on its customer portfolio. Nonetheless, customer and market trends could have an impact on the profitability of the display business. In the electronic materials business, the Group's main customers are companies involved in industries such as semiconductors and optoelectronics. The performance of these customers depends on market trends in areas such as semiconductors, smartphones, communications infrastructure and industrial equipment. For this reason, earnings in the electronic materials business could be influenced by the impact of these trends.

4) Chemicals

In chlor-alkali products, the Group has established production bases primarily in Japan and Southeast Asia, where progress is being made on infrastructure development, and is expanding its business. Demand for these products is mainly correlated with economic growth rates and capacity utilization in core industries in each region and country. Accordingly, earnings in this business could be impacted by fluctuations in demand for chlor-alkali products. In the fluorochemicals & specialty business, the Group's main customers are companies involved in transportation equipment, semiconductor and construction industries. Accordingly, earnings in the fluorochemicals & specialty business could be impacted by market trends in these industries.

5) Life Science

In the life science business, the Group is greatly impacted by business conditions and the development status of new products in the pharmaceuticals and agrochemicals industries. Accordingly, earnings in the life science business could be impacted by these trends.

(2) Expansion of overseas operations

The Group, in addition to its operations in Japan, has overseas operations, including exports and imports of products and manufacturing abroad. The risks associated with these global business activities include deteriorating political and economic conditions, the imposition of regulations on exports and imports and foreign investments, unexpected changes in laws and regulations, the worsening of public security, economic sanctions between countries, and the occurrence of social turmoil or other disruptions due to terrorist attacks, war, infectious diseases or other factors in the countries and regions where the Group operates. For its part, the Group carefully monitors factors such as political and economic conditions and regulatory trends in each country and region and strives to mount effective responses appropriate to the situation. However, the occurrence of these events may hinder the Group's overseas operations and have a serious effect on its performance and financial position.

(3) Competitive edge and development and commercialization of new technologies and products

In every field in which the Group operates, there are competitors supplying products similar to those of the Group. Accordingly, to maintain its competitive edge, the Group is striving to identify the needs of customers, and to develop and commercialize new technologies and products. However, should the Group fail to appropriately respond to technical changes and customer needs or take too long to develop and commercialize new technologies and products, growth could be hampered and profitability could decline. This may significantly impact the Group's performance and financial position.

(4) Manufacturing

The Group strives to carry out preventive maintenance on all plant equipment and facilities, and it is working to strengthen priorities such as systems for safety review and maintenance and repair of equipment and facilities. If there are any serious production disruptions, this could have a significant impact on the Group's performance and financial position.

(5) Procurement of production materials and resources

If there are fluctuations in the prices of electricity, fuel gas, heavy oil or raw materials used in the Group's production activities, the Group's performance and financial position could be affected. The Group hedges the risk of price fluctuations for certain raw materials and fuel through instruments such as commodity contracts. Nevertheless, the Group may be unable to completely eliminate the impact of rising raw material and fuel prices. Additionally, as part of the Group's production activities, the Group uses certain special raw materials, supplies and other resources for which suppliers are limited. The Group considers alternative materials and strives to promote the purchasing of such raw materials, supplies and other resources from multiple suppliers. However, if the supply of these materials tightens or is delayed, or price fluctuations occur, the Group's performance and financial position may be greatly affected.

(6) Government regulations

In the countries and regions where it operates, the Group is subject to the local government approval and authorization of investments, regulations on exports and imports, and laws governing commercial transactions, labor, patents, taxation, foreign exchange, and other issues. The Group will closely monitor trends in amendments to relevant laws and regulations and strive to gather information. Meanwhile, amendments to relevant laws and regulations may significantly influence the Group's performance and financial position.

(7) Environmental regulations

The Group designates the environment as an element of the Our Shared Values component of its AGC Group Vision. The Group accordingly complies with all applicable laws and regulations related to the environment while furthermore striving to protect the global environment by mitigating environmental impacts associated with its operations through such means as setting and implementing voluntary control standards that are more stringent than legal and regulatory benchmarks.

Nevertheless, as an environmental regulation risk, the Group could find itself involved in unintended environmental pollution or other such incidents as a result of emissions from the Group's manufacturing processes, chemical substances contained in its products, or other such causes. Such a scenario could result in a deterioration in the Group's social credibility, restrictions on business activity, incurring expenses, and other consequences, which could affect the Group's profit and loss. Moreover, revised or strengthened regulations in each country or region may require the Group to bear additional costs or capital investment, or such regulations may hinder product development, production, sales, services, and other business activities. In such a scenario, the Group's profit and loss could be affected.

To address sustainability, the Group actively engages in initiatives across its entire value chain to meet the goals it has set for addressing climate change, making effective use of resources, and conserving natural capital. The Group acknowledges, however, that there are physical risks as well as regulatory adaptation and transition risks.

Specifically, in terms of physical risks resulting from climate change, if natural disasters such as typhoons and floods, or if risks related to water resources, such as droughts, become more severe, the Group's production activities may be affected. Furthermore, in terms of transition risks toward a low-carbon society, if carbon pricing such as a carbon tax which has already begun to be implemented in some areas is required to be implemented on a full scale, the cost burden required to comply with these regulations and other rules may have an impact on the Group's profit and loss. Additionally, the Group may potentially be subject to opportunity loss due to deterioration of its reputation or social credibility if it is unable to address increasingly stringent regulations in each country and geographical region for conforming to regulations on greenhouse gas emissions and otherwise addressing climate change; it is unable to achieve targets for reducing greenhouse gas emissions in alignment with the Paris Agreement; or it is unable to address mounting stakeholder demands for the Group to contribute to decarbonization through its business activities. Additionally, the Group may experience opportunity losses in the market if it is unable to address relevant sustainability issues, such as efforts to standardize and legislate circular economic systems and carbon footprints.

(8) Product liability

The Group is making every effort to ensure that products are of the highest quality, according to their individual characteristics. Despite these efforts, the possibility remains that quality problems may occur because of unanticipated factors, prompting a major recall, for example. This could substantially influence the Group's performance and financial position.

(9) Intellectual property rights

The Group endeavors to acquire intellectual property rights that are useful for its present business activities and future operations alike, while investigating the rights and business conditions of third parties, in order to prevent intellectual property issues from arising. However, there is the possibility that the Group will have disputes with third parties over intellectual property or that third parties will infringe the Group's intellectual property rights. This has the potential to materially influence the Group's performance and financial position.

(10) Litigation and legal procedures

There is always a risk that other firms, corporate groups, or individuals may take legal actions against the Group with respect to its operations at home and abroad. As of March 30, 2023, there were some lawsuits and legal proceedings pending. If these lawsuits and proceedings result in an unfavorable outcome for the Group, its performance and financial position may be significantly impacted.

(11) Effect of natural disasters and accidents

The Group endeavors to prevent occupational accidents and other accidents involving equipment and facilities, such as production machinery, through the establishment and operation of a systematic management system for occupational safety and health, and for industrial safety and security, along with efforts to promote and ensure machinery safety, and to manage inspections, maintenance and repairs. However, the Group faces the risk of unforeseeable events such as a severe occupational accident, serious fire, explosion or leakage incident.

Regarding preparedness for natural disasters, the Group has assessed risks concerning earthquakes, high winds, flooding and other natural events at its major bases, and has drawn up business continuity plans for bases that are exposed to significant hazards. Despite these efforts, the Group faces the risk of unforeseeable events such as damage to production facilities and the suspension of product shipments due to severed transportation networks, as a result of natural disasters such as major earthquakes, typhoons, and floods.

If production is suspended temporarily or for an extended period in the Group or the Group's supply chain as a result of the occurrence of such unforeseen events, the supply of products to customers may be disrupted given that alternative production is not possible for certain products, and this could have a significant impact on the Group's performance and financial position.

(12) Exchange rate fluctuations

The Group manufactures and sells products worldwide, and converts transaction accounts in local currencies, including sales, costs, and assets, into Japanese yen when preparing its consolidated financial statements. Even if the values of these items remain unchanged in local currency terms, they may change when converted into Japanese yen depending on exchange rates.

The Group also manufactures products at its facilities worldwide, including Japan, and exports the products to a number of countries. The Group generally procures raw materials and sells products in the local currency of each country/region, but there are some product sales and material purchases denominated in foreign currencies. Accordingly, fluctuations in exchange rates influence the prices of materials the Group procures and the pricing for its products. The Group implements measures such as hedge transactions to address short-term exchange rate fluctuations, along with striving to reduce risk through steps such as conducting production from production bases located globally. Despite these efforts, the Group's performance and financial position could be impacted heavily as a result of large movements in exchange rates.

(13) Retirement benefit obligations

The Group calculates costs for employee retirement benefits and obligations based on actuarial assumptions of the returns on pension funds and a specific discount rate. If the actuarial assumptions and results diverge substantially because of deterioration in the market environment for pension fund management, future costs for retirement benefits will increase, and this may seriously impact the Group's performance and financial position.

(14) Impairment of non-financial assets

Non-financial assets including property, plant and equipment, goodwill and intangible assets reported on the Group's consolidated statements of financial position may become subject to impairment loss if a recoverable amount of any such asset has fallen below the carrying amount due to lower profitability, changes in fair value or other such circumstances going forward. Such a scenario could significantly affect the Group's performance and financial position.

Notably, in the display business, which is included in the Electronics segment, the Group has recognized a deteriorated operating result primarily due to the impact of slow sales of televisions, personal computers and related items, and increased cost caused by the weaker yen and soaring raw material and fuel prices, which resulted in an indication of impairment for the cash-generating unit to which its business' property, plant and equipment and related assets belong. The Group has performed an impairment test. As a result, the Group has recognized an impairment loss of ¥73,673 million. Moreover, the Group has identified indications of impairment, such as a significant decline in profitability, on goodwill and other intangible assets, among other items, in the super high-end CCL business and the industrial films business (printed circuit board materials business, etc.) included in the Electronics segment, in light of a decline in demand due to the impacts of U.S.-China trade friction and the spread of COVID-19 in China. The Group has performed an impairment test. As a result, the Group recognized an impairment loss of ¥32,223 million. Furthermore, the automotive glass business in Europe (Western and Central Europe), which is included in the Glass segment, has recognized recurring operating losses since before the previous fiscal year, and the business environment has further deteriorated primarily due to slow automotive demand caused by the situation in Russia and Ukraine. Consequently, the Group has identified indications of impairment for the cash-generating unit to which this business' property, plant and equipment and related assets belong. The Group has performed an impairment test. As a result, the Group recognized an impairment loss of ¥6,700 million. Moreover, in the architectural glass and automotive glass businesses in Russia, the economic environment deteriorated because of the prolonged Russia-Ukraine situation. Consequently, the Group has identified indications of impairment for the cash-generating unit to which these businesses' property, plant and equipment and related assets belong. The Group has performed an impairment test. As a result, the Group has recognized impairment losses of ¥9,922 million in the architectural glass business and ¥3,664 million in the automotive glass business.

(15) Information security

Information systems are now playing an extremely important role in the Group's business activities, and the Group strives to protect its information assets, such as systems and data. Moreover, the Group implements measures to prevent security incidents and measures to minimize the impact of such incidents when they occur. However, if important operations are interrupted or confidential data is leaked and so forth due to a natural disaster, cyberattack, unauthorized access, or other unforeseen situation, this may have a significant impact on the Group's performance and financial position.

1 FINANCIAL STATEMENTS (IFRS)

Consolidated Financial Statements (IFRS)

i) Consolidated Statements of Financial Position

(Unit: Millions of yen)

	Note	FY2021 (as of December 31, 2021)	**FY2022 (as of December 31, 2022)**
ASSETS			
Current assets			
Cash and cash equivalents	5, 26	¥ 195,830	**¥ 209,716**
Trade receivables	6, 26	295,161	**315,808**
Inventories	7	330,101	**436,516**
Other receivables	6, 26	65,472	**60,614**
Income taxes receivable		3,518	**5,094**
Other current assets	26	25,186	**35,260**
Total current assets		915,271	**1,063,009**
Non-current assets			
Property, plant and equipment	8, 10, 11	1,323,868	**1,350,769**
Goodwill	9,11	112,916	**92,768**
Intangible assets	9,11	69,913	**71,290**
Investments accounted for using equity method	12	31,197	**24,609**
Other financial assets	26	116,624	**94,075**
Deferred tax assets	13	27,611	**40,778**
Other non-current assets		68,628	**76,728**
Total non-current assets		1,750,759	**1,751,019**
Total assets		¥2,666,031	**¥2,814,029**

(Unit: Millions of yen)

	Note	FY2021 (as of December 31, 2021)	**FY2022 (as of December 31, 2022)**
LIABILITIES AND EQUITY			
LIABILITIES			
Current liabilities			
Trade payables	14, 26	¥ 196,435	**¥ 214,332**
Short-term interest-bearing debt	15, 26	36,820	**69,750**
Long-term interest-bearing debt due within one year	15, 26	88,599	**122,254**
Other payables	14, 26	199,169	**211,855**
Income taxes payable		42,411	**27,283**
Provisions	16	1,207	**1,310**
Other current liabilities	26	34,764	**23,211**
Total current liabilities		599,408	**669,999**
Non-current liabilities			
Long-term interest-bearing debt	15, 26	477,774	**458,237**
Deferred tax liabilities	13	35,814	**28,851**
Post-employment benefit liabilities	17	53,805	**45,578**
Provisions	16	12,064	**17,783**
Other non-current liabilities	26	5,782	**7,989**
Total non-current liabilities		585,241	**558,439**
Total liabilities		1,184,650	**1,228,439**
EQUITY			
Share capital	19	90,873	**90,873**
Capital surplus	19	81,621	**97,094**
Retained earnings	19	927,830	**889,827**
Treasury shares	19	(26,933)	**(26,586)**
Other components of equity	19	240,769	**339,046**
Total equity attributable to owners of the parent		1,314,161	**1,390,254**
Non-controlling interests		167,219	**195,335**
Total equity		1,481,380	**1,585,590**
Total liabilities and equity		¥2,666,031	**¥2,814,029**

ii) Consolidated Statements of Profit or Loss and Consolidated Statements of Comprehensive Income (Consolidated Statements of Profit or Loss)

(Unit: Millions of yen)

	Note	FY2021 (Jan. 1 through Dec. 31, 2021)	**FY2022 (Jan. 1 through Dec. 31, 2022)**
Net sales	21	¥ 1,697,383	**¥ 2,035,874**
Cost of sales	22	(1,184,383)	**(1,506,492)**
Gross profit		512,999	**529,381**
Selling, general and administrative expenses	22	(309,123)	**(346,675)**
Share of profit (loss) of associates and joint ventures accounted for using equity method	12	2,292	**1,236**
Operating profit		206,168	**183,942**
Other income	22	56,672	**27,156**
Other expenses	22	(52,592)	**(153,892)**
Business profit		210,247	**57,206**
Finance income	23	6,533	**10,603**
Finance costs	23	(6,735)	**(9,297)**
Net finance income (costs)		(202)	**1,306**
Profit before tax		210,045	**58,512**
Income tax expenses	24	(50,982)	**(36,007)**
Profit (loss) for the year		¥ 159,062	**¥ 22,505**
Attributable to owners of the parent		¥ 123,840	**¥ (3,152)**
Attributable to non-controlling interests		35,222	**25,657**
Earnings per share			
Basic earnings (loss) per share (Yen)	25	¥ 559.11	**¥ (14.22)**
Diluted earnings (loss) per share (Yen)	25	557.10	**(14.22)**

(Consolidated Statements of Comprehensive Income)

(Unit: Millions of yen)

	Note	FY2021 (Jan. 1 through Dec. 31, 2021)	**FY2022 (Jan. 1 through Dec. 31, 2022)**
Profit (loss) for the year		¥159,062	**¥ 22,505**
Other comprehensive income			
Components of other comprehensive income that will not be reclassified to profit or loss, net of tax			
Remeasurements of defined benefit plans	20	24,397	**16,598**
Net change in revaluation of financial assets measured at FVTOCI(Note)	20	9,360	**921**
Share of other comprehensive income of associates and joint ventures accounted for using equity method	12, 20	16	**8**
Total		33,774	**17,528**
Components of other comprehensive income that will be reclassified to profit or loss, net of tax			
Cash flow hedges	20	4,744	**(2,905)**
Exchange differences on translation of foreign operations	20	77,819	**122,753**
Share of other comprehensive income of associates and joint ventures accounted for using equity method	12, 20	(0)	**—**
Total		82,563	**119,847**
Other comprehensive income, net of tax		116,338	**137,376**
Total comprehensive income for the year		¥275,401	**¥159,881**
Attributable to owners of the parent		¥231,244	**¥116,449**
Attributable to non-controlling interests		44,156	**43,431**

Note: FVTOCI: Fair Value Through Other Comprehensive Income

iii) Consolidated Statements of Changes in Equity

(Unit: Millions of yen)

FY2021 (Jan. 1 through Dec. 31, 2021)	Note	Equity attributable to owners of the parent					
						Other components of equity	
		Share capital	Capital surplus	Retained earnings	Treasury shares	Remeasurements of defined benefit plans	Net change in revaluation of financial assets measured at FVTOCI(Note)
Balance as of January 1, 2021		¥90,873	¥83,501	¥818,701	¥(28,170)	¥(31,203)	¥ 51,397
Changes in equity							
Comprehensive income							
Profit (loss) for the year		—	—	123,840	—	—	—
Other comprehensive income	20	—	—	—	—	24,276	9,370
Total comprehensive income for the year		—	—	123,840	—	24,276	9,370
Transactions with owners							
Dividends	19	—	—	(31,045)	—	—	—
Acquisition of treasury shares	19	—	—	—	(586)	—	—
Disposal of treasury shares	19	—	—	(537)	1,823	—	—
Changes in ownership interests in subsidiaries that do not result in loss of control		—	1,242	—	—	—	—
Transfer from other components of equity to retained earnings		—	—	16,870	—	—	(16,870)
Share-based payment transactions	18	—	(655)	—	—	—	—
Others (business combinations and others)		—	(2,467)	—	—	—	—
Total transactions with owners		—	(1,879)	(14,712)	1,237	—	(16,870)
Balance as of December 31, 2021		¥90,873	¥81,621	¥927,830	¥(26,933)	¥ (6,927)	¥ 43,896

Note: FVTOCI: Fair Value Through Other Comprehensive Income

(Unit: Millions of yen)

FY2021 (Jan. 1 through Dec. 31, 2021)	Note	Equity attributable to owners of the parent					
		Other components of equity					
		Cash flow hedges	Exchange differences on translation of foreign operations	Total	Total	Non-controlling interests	Total equity
Balance as of January 1, 2021		¥ 439	¥129,602	¥150,236	¥1,115,142	¥127,897	¥1,243,039
Changes in equity							
Comprehensive income							
Profit (loss) for the year		—	—	—	123,840	35,222	159,062
Other comprehensive income	20	4,513	69,245	107,404	107,404	8,934	116,338
Total comprehensive income for the year		4,513	69,245	107,404	231,244	44,156	275,401
Transactions with owners							
Dividends	19	—	—	—	(31,045)	(3,821)	(34,867)
Acquisition of treasury shares	19	—	—	—	(586)	—	(586)
Disposal of treasury shares	19	—	—	—	1,285	—	1,285
Changes in ownership interests in subsidiaries that do not result in loss of control		—	—	—	1,242	(1,012)	230
Transfer from other components of equity to retained earnings		—	—	(16,870)	—	—	—
Share-based payment transactions	18	—	—	—	(655)	—	(655)
Others (business combinations and others)		—	—	—	(2,467)	—	(2,467)
Total transactions with owners		—	—	(16,870)	(32,226)	(4,834)	(37,060)
Balance as of December 31, 2021		¥4,952	¥198,847	¥240,769	¥1,314,161	¥167,219	¥1,481,380

(Unit: Millions of yen)

FY2022 (Jan. 1 through Dec. 31, 2022)	Note	Equity attributable to owners of the parent					
						Other components of equity	
		Share capital	Capital surplus	Retained earnings	Treasury shares	Remeasurements of defined benefit plans	Net change in revaluation of financial assets measured at FVTOCI(Note)
Balance as of January 1, 2022		¥90,873	¥81,621	¥927,830	¥(26,933)	¥ (6,927)	¥ 43,896
Changes in equity							
Comprehensive income							
Profit (loss) for the year		—	—	(3,152)	—	—	—
Other comprehensive income	20	—	—	—	—	16,363	932
Total comprehensive income for the year		—	—	(3,152)	—	16,363	932
Transactions with owners							
Dividends	19	—	—	(52,162)	—	—	—
Acquisition of treasury shares	19	—	—	—	(342)	—	—
Disposal of treasury shares	19	—	—	(221)	689	—	—
Changes in ownership interests in subsidiaries that do not result in loss of control		—	(3,110)	—	—	(30)	(0)
Transfer from other components of equity to retained earnings		—	—	17,534	—	—	(17,534)
Share-based payment transactions	18	—	(22)	—	—	—	—
Others (business combinations and others)		—	18,605	—	—	—	—
Total transactions with owners		—	15,472	(34,849)	347	(30)	(17,534)
Balance as of December 31, 2022		¥90,873	¥97,094	¥889,827	¥(26,586)	¥ 9,405	¥ 27,294

Note: FVTOCI: Fair Value Through Other Comprehensive Income

(Unit: Millions of yen)

FY2022 (Jan. 1 through Dec. 31, 2022)	Note	Equity attributable to owners of the parent					
		Other components of equity					
		Cash flow hedges	Exchange differences on translation of foreign operations	Total	Total	Non-controlling interests	Total equity
Balance as of January 1, 2022		¥ 4,952	¥198,847	¥240,769	¥1,314,161	¥167,219	¥1,481,380
Changes in equity							
Comprehensive income							
Profit (loss) for the year		—	—	—	(3,152)	25,657	22,505
Other comprehensive income	20	(3,052)	105,358	119,601	119,601	17,774	137,376
Total comprehensive income for the year		(3,052)	105,358	119,601	116,449	43,431	159,881
Transactions with owners							
Dividends	19	—	—	—	(52,162)	(12,786)	(64,948)
Acquisition of treasury shares	19	—	—	—	(342)	—	(342)
Disposal of treasury shares	19	—	—	—	468	—	468
Changes in ownership interests in subsidiaries that do not result in loss of control		422	(4,182)	(3,790)	(6,901)	(2,529)	(9,431)
Transfer from other components of equity to retained earnings		—	—	(17,534)	—	—	—
Share-based payment transactions	18	—	—	—	(22)	—	(22)
Others (business combinations and others)		—	—	—	18,605	—	18,605
Total transactions with owners		422	(4,182)	(21,325)	(40,356)	(15,315)	(55,671)
Balance as of December 31, 2022		¥ 2,321	¥300,024	¥339,046	¥1,390,254	¥195,335	¥1,585,590

iv) Consolidated Statements of Cash Flows

(Unit: Millions of yen)

	Note	FY2021 (Jan. 1 through Dec. 31, 2021)	**FY2022 (Jan. 1 through Dec. 31, 2022)**
Cash flows from operating activities			
Profit before tax		¥ 210,045	**¥ 58,512**
Depreciation and amortization		166,756	**185,656**
Impairment losses		34,450	**128,447**
Interest and dividend income		(5,826)	**(8,067)**
Interest expenses		6,424	**9,040**
Share of loss (profit) of associates and joint ventures accounted for using equity method		(2,292)	**(1,236)**
Loss (gain) on sale or disposal of fixed assets		4,324	**(6,151)**
Decrease (increase) in trade receivables		(18,280)	**(4,180)**
Decrease (increase) in inventories		(48,647)	**(84,114)**
Increase (decrease) in trade payables		36,226	**2,859**
Others		(21,646)	**16,032**
Subtotal		361,533	**296,798**
Interest and dividends received		6,663	**11,401**
Interest paid		(6,569)	**(8,540)**
Income taxes refund (paid)	24	(34,913)	**(82,512)**
Cash flows from operating activities		326,713	**217,146**
Cash flows from investing activities			
Purchase of property, plant and equipment, and intangible assets		(210,572)	**(223,921)**
Proceeds from sale of property, plant and equipment		4,776	**17,722**
Purchase of other financial assets		(42,107)	**(20,520)**
Proceeds from sale and redemption of other financial assets		73,040	**68,646**
Proceeds from sale of shares of subsidiaries and associates or other businesses		49,599	**15,548**
Others		1,476	**(2,787)**
Cash flows from investing activities		(123,787)	**(145,312)**
Cash flows from financing activities			
Changes in short-term interest-bearing debt	15	(73,868)	**29,004**
Proceeds from borrowing or issuing long-term interest-bearing debt	15	63,673	**95,576**
Repayment or redemption of long-term interest-bearing debt	15	(205,619)	**(122,910)**
Payments for acquisition of interests in subsidiaries from non-controlling interests		(1,271)	**(26,368)**
Proceeds from non-controlling interests		—	**11,317**
Acquisition of treasury shares	19	(586)	**(342)**
Dividends paid	19	(31,045)	**(52,162)**
Dividends paid to non-controlling interests		(3,821)	**(12,950)**
Others		280	**630**
Cash flows from financing activities		(252,259)	**(78,206)**
Effect of exchange rate changes on cash and cash equivalents		9,039	**20,257**
Net increase (decrease) in cash and cash equivalents		(40,294)	**13,885**
Cash and cash equivalents at the beginning of the year	5	236,124	**195,830**
Cash and cash equivalents at the end of the year	5	¥ 195,830	**¥ 209,716**

Note 1: Reporting entity

AGC Inc. (the “Company”) is a company domiciled in Japan. The consolidated financial statements of the Company as of and for the fiscal year ended December 31, 2022 comprise the Company and its subsidiaries (the “Group”), and interests in associates and jointly controlled entities, etc. (the “Group entities”).

The Group is engaged in business activities primarily in the areas of Glass Operations, Electronics Operations, and Chemicals Operations. Please see Note 4 “Segment information” for details on the Group’s businesses.

Note 2: Basis of preparations

(1) Statement of compliance with IFRS

The Group’s consolidated financial statements have been prepared in accordance with International Financial Reporting Standards (“IFRS”), based on the stipulations of Article 93 of the Ordinance on Consolidated Financial Statements. The Group’s consolidated financial statements satisfy all of the requirements for a “Specified Company” prescribed by Article 1-2 of the Ordinance on Consolidated Financial Statements.

On March 30, 2023, the consolidated financial statements were approved by President & CEO Yoshinori Hirai and Representative Director & CFO Shinji Miyaji.

(2) Basis of measurement

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

— Derivative financial instruments are measured at fair value.
— Equity instruments are measured at fair value.
— Contingent consideration liabilities are measured at fair value.
— Defined benefit pension plan assets and liabilities are measured at the present value of defined benefit obligations less the fair value of the plan assets.

(3) Presentation currency

The consolidated financial statements are presented in Japanese yen, which is also the Company’s functional currency. The currency unit is millions of yen, with figures less than one million yen rounded down.

(4) Use of estimates and judgments

The preparation of consolidated financial statements in accordance with IFRS requires management to make judgments, estimates and assumptions that affect the adoption of accounting policies and the reported amounts of assets, liabilities, income and expenses. Actual results could differ from these estimates.

The estimates and their underlying assumptions are reviewed continuously. Changes in accounting estimates are recognized prospectively.

The following notes include information about the judgements made in applying accounting policies that have the most significant effect on the amounts in the financial statements, and uncertainty of assumptions and estimates as of December 31, 2022 that have a significant risk of resulting in a material adjustment to the carrying amounts of assets and liabilities in the fiscal year ending December 31, 2023.

— Estimates of useful lives and residual values of property, plant and equipment and intangible assets (See Note 3 “Significant accounting policies” (6) (7), Note 8 “Property, plant and equipment” and Note 9 “Goodwill and intangible assets”)
— Calculation of the value in use and the fair value less costs of disposal in cash-generating units, the smallest unit of measurement for impairment of property, plant and equipment, goodwill and intangible assets (See Note 3 “Significant accounting policies” (9) and Note 11 “Impairment of non-financial assets”)
— The recoverability of deferred tax assets (See Note 3 “Significant accounting policies” (16) and Note 13 “Deferred tax assets and liabilities”)
— Actuarial assumptions for defined benefit pension plans (See Note 3 “Significant accounting policies” (11) and Note 17 “Employee benefits”)

(5) Changes in accounting policies

The significant accounting policies adopted for the Group's consolidated financial statements are the same as those for the consolidated financial statements for the fiscal year ended December 31, 2021, with the exception of the items described below.

The following are the accounting standards applied by the Group from fiscal year 2022, in compliance with each transitional provision. The effect of the application of the following standards on the Group's consolidated financial statements is immaterial.

IFRS	Title	Summaries of new IFRS and amendments
IAS 16 (amended in May 2020)	Property, Plant and Equipment	Property, Plant and Equipment—Proceeds before Intended Use
IAS 37 (amended in May 2020)	Provisions, Contingent Liabilities and Contingent Assets	Onerous Contracts—Cost of Fulfilling a Contract
IFRS 3 (amended in May 2020)	Business Combinations	Reference to the Conceptual Framework

Note 3: Significant accounting policies

(1) Basis of consolidation

i) Business combinations

Business combinations are accounted for using the acquisition method when control is obtained. The Group recognizes goodwill as any excess of the aggregate of the consideration transferred, the amount of any non-controlling interest and, in the case of a business combination achieved in stages, the acquisition-date fair value of the equity interest of the acquiree previously held by the acquirer, over the net of the acquisition-date amounts of the identifiable assets acquired from the acquiree and the liabilities assumed.

If the consideration transferred is lower than the latter net amount, the Group immediately recognizes the difference as profit or loss.

Impairment test of goodwill is conducted annually, regardless of any indication of impairment. (See (9) "Impairment of non-financial assets").

Business combinations of entities under common control are accounted for based on carrying amounts. These business combinations are those in which all the combining entities or businesses are ultimately controlled by the same party or parties both before and after the business combination, and that control is not transitory.

ii) Subsidiaries

Subsidiaries are entities controlled by the Group. A subsidiary is controlled when the Group is exposed or has rights to variable returns from its involvement with the investee, and has the ability to use power over the investee to affect those returns. The accounting policies of subsidiaries have been adjusted in order to ensure conformity with the accounting policies adopted by the Group, as necessary.

iii) Non-controlling interests

The components of profit or loss and other comprehensive income are attributed to owners of the parent and non-controlling interests. Of transactions giving rise to a change in the interest between the Company and the non-controlling interests of a subsidiary, for transactions that do not result in a loss of control, changes in the non-controlling interests in the subsidiary and the net amount of consideration paid (or received) are recognized directly in equity, and are not recognized as goodwill or as profit or loss.

iv) Investments in associates and joint ventures

An associate is an entity over which the Group has significant influence over its financial and operating policies, but does not exercise control of it. Significant influence is presumed to exist when the Group holds 20% or more of the voting rights in another entity. Considering not only the ratio of the voting rights, but also other elements, such as participation in management, an associate is included if the Group can exercise significant influence.

A joint venture is a joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the arrangement.

Investments in associates and joint ventures are recognized at cost initially on acquisition and are subsequently accounted for using the equity method (hereinafter "Investments accounted for using equity method"). Any differences between the investment on the investment date and the corresponding equity of the investee are included in the carrying amount of the investment as goodwill. The consolidated financial statements reflect the investments in associates and joint ventures' share of profit or loss and other comprehensive income of the investee from the date on which the Group obtains significant influence until the end of the reporting period. In the event that the Group's burden of loss exceeds the investment in the investee, the carrying amount of the Group's share is reduced to zero. Except for when the Group incurs obligations or makes payments on behalf of the equity-accounted investee, the Group shall recognize no further loss.

Goodwill that forms part of the carrying amount of investments in associates and joint ventures is not separately recognized, and therefore is not tested for impairment separately. Instead, whenever there is any objective evidence that an investment in an associate or joint venture may be impaired, the entire carrying amount of the investment is tested for impairment as a single asset.

v) Transactions eliminated on consolidation

All intergroup balances, transactions and unrealized gains and losses arising from intragroup transactions are eliminated in preparing the consolidated financial statements.

Unrealized losses are eliminated only to the extent that there is no evidence of impairment.

(2) Foreign currency

i) Foreign currency transactions

Foreign currency transactions are translated into functional currencies of the individual Group entities by applying the rates of exchange prevailing at the dates of transactions. Monetary assets and liabilities denominated in foreign currencies are translated into the respective functional currencies at the prevailing exchange rates at the reporting date. Foreign exchange differences on translation are recognized as profit or loss. Exchange differences for any gains or losses on the assets and liabilities recognized in other comprehensive income are recognized in other comprehensive income.

Non-monetary assets and liabilities measured in terms of historical cost in foreign currencies are translated at the exchange rate at the date of the transaction.

ii) Foreign operations

Assets and liabilities of foreign operations, including goodwill and fair value adjustments arising on the acquisition of foreign operations, are translated into functional currency at the exchange rates prevailing at the reporting date. Income and expenses of foreign operations are translated into functional currency at the average exchange rate for the period.

(3) Financial instruments

The Group recognizes financial instruments on the contract date when the Group becomes a party to the contractual provisions of the instrument.

The Group derecognizes a financial asset in the following circumstances:

— When the contractual rights to receive the cash flows from the financial asset expire; or

— When the contractual rights to receive the cash flows from the financial asset in transactions in which substantially all the risks and rewards of ownership of the financial asset are transferred to another entity.

In regard to transferred financial assets, the Group recognizes any retained interest of the transferred financial asset as a separate asset or liability.

Financial assets and financial liabilities are offset and presented as a net amount on the consolidated statements of financial position only when the Group has a legally enforceable right to set off the recognized amounts and intends either to settle on a net basis or to realize the asset and settle the liability simultaneously.

i) Non-derivative financial assets

The Group holds non-derivative financial assets that are classified into financial assets measured at amortized cost, financial assets measured at fair value through other comprehensive income and financial assets measured at fair value through profit or loss.

Financial assets measured at amortized cost

Financial assets are classified as financial assets measured at amortized cost if the following two conditions are met:

— The foregoing financial assets are held within a Group business model whose objective is to hold the assets in order to collect contractual cash flows from the assets; and

— The contractual terms of the foregoing financial assets give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

The foregoing financial assets are initially recognized at fair value plus directly attributable transaction costs except for trade receivables, etc., that do not contain a significant financing component. The trade receivables, etc., that do not contain a significant financial component are initially recognized plus transaction cost. After initial recognition, the financial assets are measured at amortized cost using the effective interest method.

Financial assets measured at fair value through other comprehensive income

The Group designates equity instruments as financial assets measured at fair value through other comprehensive income when an irrevocable election has been made on initial recognition to measure the gains and losses arising from changes in the fair value of such instruments in other comprehensive income.

When the foregoing financial assets measured at fair value through other comprehensive income are derecognized through sale, etc., the cumulative gains or losses are reclassified from other components of equity to retained earnings.

Financial assets measured at fair value through profit or loss

The Group measures financial assets at fair value and recognizes any changes in the fair value of such assets as profit or loss, unless the foregoing financial assets are classified as financial assets measured at amortized cost or financial assets measured at fair value through other comprehensive income.

Impairment of financial assets

At the end of each reporting period, the Group evaluates whether the credit risk on financial assets has increased significantly since the initial recognition. If the credit risk of a financial asset has increased significantly, the allowance for such financial assets is measured at an amount equal to the lifetime expected credit losses. If the credit risk has not increased significantly, the allowance for such financial assets is measured at an amount equal to the 12-month expected credit losses.

However, with regards to trade receivables and contract asset that do not contain a significant financing component, the allowance is always measured at an amount equal to the lifetime expected credit losses. In estimating the allowance, expected credit losses of certain financial assets are measured on a collective basis such as every past due date.

The Group determines if credit risk has increased significantly by evaluating changes in default risk after initial recognition with reference to factors including significant downgrading of ratings, stopping transaction due to delayed receivable, and other indications of insolvency. If it is more than 90 days past due, the Group determines that default is occurred.

In measuring credit losses, the Group uses reasonable and supportable information on the past events, current conditions and forecasts on future economic conditions, which is available without undue cost or effort at the reporting date.

The Group assesses a credit-impairment based on objective evidence such as a borrower's significant financial difficulty, etc. When it is reasonably determined that all or part of the financial assets are not collectable, the carrying amount of financial assets is directly written off.

ii) Non-derivative financial liabilities

The Group recognizes non-derivative financial liabilities that are classified into financial liabilities measured at amortized cost and contingent consideration liabilities.

Financial liabilities measured at amortized cost

The Group recognizes the following as financial liabilities measured at amortized cost: trade payables, other payables, and interest-bearing debts (borrowings, commercial paper, corporate bonds, and bonds with subscription rights to shares (excluding share subscription rights)), among other items.

The foregoing financial liabilities are initially recognized at fair value less directly attributable transaction costs. After initial recognition, non-derivative financial liabilities are measured at amortized cost using the effective interest method.

The Group derecognizes financial liabilities when the obligation specified in the contract is exempted, cancelled or expired.

Contingent consideration liabilities

The Group recognizes contingent consideration liabilities in business combinations as financial liabilities measured at fair value through profit or loss. The foregoing financial liabilities are measured at fair value, with changes recognized in profit or loss.

iii) Bonds with subscription rights to shares

The Group classifies proceeds from the issue of bonds with subscription rights to shares into a liability component and an equity component based on the issuing conditions.

Upon initial recognition, the liability component of bonds with subscription rights to shares is initially recognized at the fair value of similar liabilities without equity conversion options. The equity component is initially recognized as the total fair value of the bonds with subscription rights to shares less the fair value of the liability component. The transaction cost related to the issue of the bonds with subscription rights to shares is prorated according to the ratio of the initial carrying amounts of the liability and equity components on initial recognition, and deducted from the amounts of the liability and equity components.

After initial recognition, the liability component of the bonds with subscription rights to shares is measured at amortized cost using the effective interest method. The equity component of the bonds with subscription rights to shares is not remeasured.

iv) Derivative financial instruments (including hedge accounting)

The Group holds derivative financial instruments to hedge mainly foreign currency exchange risk, interest rate risk, and commodity price risk.

The Group initially recognizes derivative financial instruments at fair value, with the related transaction costs recognized in profit or loss when incurred. After initial recognition, derivative financial instruments are measured at fair value, with changes in fair value accounted for as follows, depending on whether or not derivatives qualify for hedge accounting:

(Derivatives not qualifying for hedge accounting)

Changes in the fair value of derivative financial instruments which do not qualify for hedge accounting are recognized in profit or loss.

(Derivatives qualifying for hedge accounting)

When applying hedge accounting, at the inception of hedges, the Group formally designates and documents hedging relationships to which hedge accounting is applied and the objectives and strategies of risk management for undertaking hedges.

At the inception of hedges, the Group evaluates whether or not the hedging instrument can be predicted to be effective. Thereafter, the Group continuously evaluates whether the derivative is highly effective in offsetting changes in future cash flows from the hedged items.

The Group applies cash flow hedges by designating qualified derivative financial instruments as hedging instruments. Cash flow hedges are designed to hedge exposure to variations in cash flows that are attributable to a particular risk associated with recognized assets or liabilities or highly probable forecast transactions which will affect profit or loss.

The effective portion of gains or losses on hedging instruments is recognized in other comprehensive income. The amounts recognized in other comprehensive income are reclassified to profit or loss in the consolidated reporting periods when the cash flows of the hedged items affect profit or loss. The ineffective portion of changes in the fair value of hedging instruments is recognized in profit or loss.

Hedge accounting is discontinued prospectively when: the hedging instrument expires or is sold, terminated, or exercised; the hedge no longer meets the criteria for hedge accounting; a forecast transaction is no longer expected to occur; or the hedging designation is revoked. A hedge designation may not be voluntarily revoked unless there is a change in the risk management objective. Therefore, if a hedging relationship ceases to meet the hedge effectiveness requirement relating to the hedge ratio, but the risk management objective for that designated hedging relationship remains the same, the Group adjusts the hedge ratio of the hedging relationship so that it meets the hedge effectiveness requirement again.

v) Equity

Ordinary shares

Ordinary shares are classified as equity. Incremental costs (net of tax) directly attributable to the issue of ordinary shares or stock options are deducted from equity.

Treasury shares

If the Company purchases treasury shares, the consideration paid, including net of directly attributable transaction costs and tax, is recognized as a deduction from equity. If the Company disposes of treasury shares, any gains or losses arising from the disposal of treasury shares are recognized in equity.

(4) Cash and cash equivalents

Cash and cash equivalents comprise cash on hand, bank deposits available for withdrawal on demand, and short-term investments due within three months or less, which are readily convertible into cash and subject to insignificant risk of changes in value.

(5) Inventories

Inventories are measured at the lower of cost and net realizable value. The cost of inventories is measured based on the moving average method, and includes costs of purchase and costs of conversion (including fixed and variable manufacturing overheads). Net realizable value is the estimated selling price in the ordinary course of business less the estimated costs of completion and the estimated costs necessary to make the sale.

(6) Property, plant and equipment

i) Recognition and measurement

Property, plant and equipment is presented at cost less accumulated depreciation and accumulated impairment losses.

Cost of property, plant and equipment includes any costs directly attributable to the acquisition of the asset. The cost of self-constructed assets includes material costs, direct labor costs, direct costs attributable to bringing the asset to the location and conditions necessary for its intended use, and the cost of dismantling, removing, and restoring the asset, as well as borrowing costs that satisfy the requirements for being capitalized.

After acquisition of property, plant and equipment, the Group recognizes costs as the carrying amount of an asset only if it is probable that future economic benefits associated with the item will flow to the Group and the cost can be measured reliably.

Differences between the carrying amount and the consideration received for the disposal of property, plant and equipment are recognized in profit or loss.

ii) Depreciation

Depreciation of property, plant and equipment excluding non-depreciable property, plant and equipment, such as land, is computed under the straight-line method over the estimated useful lives of each item and the depreciable amount which is the cost of the asset less its residual value.

The estimated useful lives of major property, plant and equipment are as follows:

— Buildings and structures: 10 to 50 years
— Machinery, equipment and vehicles: 4 to 15 years
— Tools, fixtures and fittings: 2 to 15 years

The depreciation methods, estimated useful lives and residual values are reviewed at the end of each reporting period, and changed when necessary.

Due to changes in the business environment and other factors, it may be necessary to revise useful lives and residual values, which may have a significant impact on the amounts of property, plant and equipment in the consolidated financial statements in the fiscal year ending December 31, 2023.

(7) Goodwill and intangible assets

i) Goodwill

Goodwill may be recognized on the acquisition of a subsidiary. The measurement of goodwill on initial recognition is shown in (1) i) “Business combinations.”

After initial recognition, goodwill is measured at cost less any accumulated impairment losses. Measurement of goodwill impairment is shown in (9) “Impairment of non-financial assets.”

ii) Research and development expenses

Expenditure related to research activities to obtain new scientific or technical knowledge and understanding are recognized as an expense when incurred.

Expenditure on development activities is capitalized as an intangible asset if it is reliably measurable, products or processes are technically and commercially feasible, it is probable to generate future economic benefits, and the Group has an intention and adequate resources to complete those assets and use or sell them. Other expenditure is recognized as an expense when incurred.

Capitalized development expenditure is presented at cost less any accumulated amortization and accumulated impairment losses.

iii) Intangible assets other than goodwill acquired through business combinations

Intangible assets acquired through business combinations and recognized separately from goodwill are initially measured at fair value as of the acquisition date. After initial recognition, the foregoing intangible assets are presented at cost less any accumulated amortization and accumulated impairment losses.

iv) Other intangible assets

Other intangible assets are initially recognized at cost. After initial recognition, intangible assets with finite useful lives are presented at cost less any accumulated amortization and accumulated impairment losses. Intangible assets with indefinite useful lives are presented at cost less any accumulated impairment losses.

v) Amortization

Amortization of intangible assets with finite useful lives is recognized as an expense under the straight-line method over their estimated useful lives from the date when the assets are available for use. The estimated useful lives of major intangible assets with finite useful lives are as follows:

— Patents and trademarks: 5 to 10 years
— Software: 5 years
— Customer relationships: 7 to 30 years

The amortization methods and useful lives are reviewed at the end of each reporting period and changed when necessary.

Due to changes in the business environment and other factors, it may be necessary to revise useful lives which may have a significant impact on the amounts of intangible assets in the consolidated financial statements in the fiscal year ending December 31, 2023.

(8) Leases

The Group, in accordance with IFRS 16, has determined whether a contract is, or contains, a lease, at the inception of the contract. A contract is determined to be a lease or contain a lease, if the contract conveys the right to control the use of an identified asset for a period of time in exchange for a consideration.

When a contract is determined to be a lease or contain a lease, the Group initially recognizes a right-of-use asset and a lease liability at the commencement date of the contract. A lease liability is initially measured at the discounted present value of unpaid lease payments at the commencement date of the contract. The right-of-use asset is initially measured at cost, which comprises the amount of the initial measurement of the lease liability, any initial direct costs incurred and prepaid lease payments, etc. The right-of-use asset is regularly depreciated over the economic life or the lease term of the underlying asset, whichever is shorter, from the commencement date of the contract. The Group does not recognize right-of-use assets and lease liabilities for leases with a lease term of 12 months or less or when the underlying assets are of low value, and recognizes lease payments as an expense on a straight-line basis over the lease term. In the consolidated statement of financial position, the right-of-use assets are included in Property, plant and equipment, and lease liabilities are included in Long-term debt due within one year or Long-term debt.

(9) Impairment of non-financial assets

At the end of each reporting period, the Group assesses the carrying amounts of non-financial assets, excluding inventories and deferred tax assets, to determine whether there is any indication of impairment of each asset or the cash-generating unit to which the asset belongs. If any such indication exists, impairment of each asset or each cash-generating unit is tested. Goodwill is tested annually, regardless of any indication of impairment.

Assets that are not individually tested are integrated into the smallest identifiable group of assets that generates cash inflows from continuing use that are largely independent of the cash inflows from other assets or groups of assets (cash-generating unit). When testing for impairment of goodwill, the goodwill is allocated to a group of cash-generating units which are not larger than an operating segment and represent the lowest level at which the goodwill is monitored for internal management purposes.

The recoverable amount of an asset or a group of cash-generating units is the higher of its fair value less costs of disposal or its value in use. In calculating an asset's value in use, estimated future cash flows are discounted to the present value using a pre-tax discount rate that reflects the time value of money and the risks specific to the asset. The fair value less costs of disposal is calculated using techniques such as the market approach and the cost approach.

If the carrying amount of an asset or a cash-generating unit exceeds the recoverable amount, an impairment loss is recognized. The impairment loss recognized with respect to a cash-generating unit is allocated first to reduce the carrying amount of any goodwill allocated to the cash-generating unit, and then to the other assets of the unit on a pro-rata basis based on the carrying amount of each asset in the unit.

An impairment loss on other non-financial assets recognized in prior periods is reversed if there are indications of the possibility of reversing such an impairment loss and if the recoverable amount exceeds the carrying amount as a result of an estimation of the recoverable amount. An impairment loss is reversed up to the carrying amount that would have been determined if there had been no impairment loss recognized for the asset in prior fiscal years and depreciation or amortization had been continuously recognized up to the reversal. An impairment loss for goodwill is not reversed in subsequent periods.

(10) Non-current assets held for sale

The Group classifies an asset or asset group which is expected to be recovered through a sale transaction rather than through continuous use as a non-current asset or disposal group held for sale when the following conditions are met: it is highly probable that the asset or asset group will be sold within one year, the asset or asset group is available for immediate sale in its present condition, and there is assurance of a plan to sell the asset or asset group. In such cases, the non-current asset is not depreciated or amortized and is measured at the lower of its carrying amount and its fair value less costs to sell.

(11) Employee benefits

Employee benefits include post-employment benefit plans, short-term employee benefits, and share-based payments. Post-employment benefit plans comprise defined benefit plans and defined contribution plans.

i) Defined benefit plans

Obligations for defined benefit plans are recognized as the present value of defined benefit obligations less the fair value of any plan assets.

The present value of the defined benefit obligation and service cost, etc. are calculated based on actuarial assumptions. Actuarial assumptions require estimates and judgments about various variables such as discount rates.

The present value of defined benefit obligations is calculated annually by qualified actuaries using the projected unit credit method. The discount rates are based on the market yields of high quality corporate bonds at the end of each reporting period that have terms consistent with the discount period, which is established as the estimated term of the post-employment benefit obligations through to the estimated dates for payments of future benefits in every fiscal year.

Actuarial gains and losses are recognized immediately in other comprehensive income when incurred, while past service costs and gains or losses on settlement are recognized in profit or loss.

Actuarial assumptions may be affected by consequences of uncertain economic conditions changes in the future or by the revision or promulgation of related laws and regulations. If a revision becomes necessary, it may have a significant impact on the amount of defined benefit pension plan assets and liabilities in the consolidated financial statements in the fiscal year ending December 31, 2023.

ii) Defined contribution plans

Expenses related to post-employment benefits for defined contribution plans are expensed as the related services are provided.

iii) Short-term employee benefits

Short-term employee benefit obligations are measured on an undiscounted basis and are recognized as expenses as the related service is provided.

For bonus payments, a liability is recognized for the amount expected to be paid under short-term cash bonuses if the Group has a present legal or constructive obligation to pay this amount as a result of past service provided by the employee, and the obligation can be estimated reliably.

iv) Share-based payments

The Company provided the Group's directors, executive officers, and other employees with stock options, which grant the holder the right to purchase the Company's stock until the fiscal year ended December 31, 2017. The fair value of stock options at the grant date is recognized in profit or loss over the vesting period from the grant date, with a corresponding increase in equity.

The Group has elected to adopt the exemptions of IFRS 1 First-time Adoption of International Financial Reporting Standards ("IFRS 1"). Accordingly, the Group has elected not to retrospectively apply IFRS 2 Share-based Payment ("IFRS 2") to stock options granted after November 7, 2002 that vested before the transition date to IFRS.

The Company has employed a framework referred to as the Board Incentive Plan Trust (hereinafter referred to as the "BIP Trust") as equity-settled share-based payment arrangement granted to directors and executive officers (excluding non-residents of Japan). The shares of the Company held by the BIP Trust are recognized as treasury shares. The Company recognizes the consideration in profit or loss measured at the grant-date fair value of its shares, with corresponding increase in equity over the vesting period of the awards.

(12) Provisions

A provision is recognized when the Group has a reasonably estimable legal or constructive obligation as a result of a past event, and it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation. Where the effect of the time value of money is material, the estimated future cash flows are discounted to the present value using a pre-tax rate that reflects the time value of money and the risks specific to the liability. The unwinding of the discount is recognized as finance costs.

The Group has established a provision for restructuring costs arising from restructuring actions to improve the business structure and the reorganization of certain operations. Such costs are recognized when they can be reasonably estimated and include an expansion in the severance compensation program.

(13) Revenue

The Group recognizes revenue based on the following five-step model.

Step 1: Identify the contract 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 satisfies a performance obligation

The Group sells a range of products including architectural glass, automotive glass, glass substrates for displays, electronic materials, chlor-alkali & urethane, fluorochemicals & specialty chemicals, and life science products. For the sales of these products, revenue is recognized upon delivery of these products as its performance obligation is satisfied when customers obtain control over these products at the time of delivery. For revenue associated with construction works such as the installation of architectural glass, and contract development and manufacturing services for biological active pharmaceutical ingredient (API), revenue is recognized according to the progress toward completion of the performance obligation. Progress toward completion is measured by the input method based on the costs incurred, etc. Also, revenue is measured based on the consideration specified in contracts with customers, less discounts, rebates, returned products, and other items.

(14) Operating profit and business profit

"Operating profit" in the Group's consolidated statements of profit or loss is an indicator that facilitates continuous comparisons and evaluations of the Group's business performance. Main items of "other income" and "other expenses" are foreign exchange gains and losses, gains on sale of non-current assets, losses on disposal of non-current assets, impairment losses and expenses for restructuring programs. "Business profit" includes all income and expenses before finance income, finance costs and income tax expenses.

(15) Finance income and finance costs

Finance income mainly comprises interest income, dividend income and gains on hedging instruments that are not recognized in other comprehensive income. Interest income is recognized as incurred using the effective interest method. Dividend income is recognized as of the date when the Group's right to receive payment is established.

Finance costs mainly comprise interest expenses and losses on hedging instruments that are not recognized in other comprehensive income.

(16) Income tax

Income tax comprises current income tax and deferred income tax. These are recognized in profit or loss, except to the extent that it relates to a business combination, or items recognized directly in equity or in other comprehensive income.

Current income tax is measured at the amount that is expected to be paid to or refunded from the taxation authorities using the tax rates enacted or substantively enacted at the end of the reporting period.

Deferred income tax is recognized on temporary differences between the carrying amounts of assets and liabilities for accounting purposes and their tax basis, using the tax rates that are expected to apply to the period when the temporary differences will reverse, based on tax laws that have been enacted or substantively enacted by the end of the reporting period. Deferred tax assets are recognized for all deductible temporary differences, and the carry forward of unused tax losses and unused tax credits to the extent that it is probable that future taxable profit will be available against which they can be utilized. Deferred tax assets are reviewed at the end of each reporting period and are recognized only to the extent that it is probable that the tax benefits can be realized.

However, deferred tax assets are not recognized if the initial recognition of an asset or liability in a transaction that is not a business combination affects neither accounting profit nor taxable profit at the time of the transaction.

Deductible temporary differences associated with investments in subsidiaries, associates and interests in joint arrangements are recognized only to the extent of the following circumstances:

— The temporary difference will reverse in the foreseeable future; and
— Taxable profit will be available against which the temporary difference can be utilized.

Deferred tax liabilities are recognized for all taxable temporary differences, in principle.

However, deferred tax liabilities are not recognized in the following circumstances:

— On the initial recognition of goodwill.
— On the initial recognition of an asset or liability in a transaction that is not a business combination affecting neither accounting profit nor taxable profit at the time of the transaction.
— There are taxable temporary differences associated with investments in subsidiaries, associates and interests in joint arrangements to the extent that the parent company 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.

Deferred tax assets and deferred tax liabilities are offset when there is a legally enforceable right to offset current tax assets against current tax liabilities and in either of the following circumstances:

— Income taxes are levied by the same taxation authority on the same taxable entity; or
— Different taxable entities intend either to settle current tax assets and liabilities on a net basis, or to realize the current tax assets and settle the current tax liabilities simultaneously.

Estimates of future taxable income may be affected by a decline in profitability and other factors, which may have a significant impact on the amount of deferred tax assets in the consolidated financial statements in the fiscal year ending December 31, 2023.

(17) Earnings per share

Basic earnings per share is calculated by dividing profit for the year attributable to owners of the parent by the weighted average number of ordinary shares outstanding during the period, adjusted by the number of treasury shares during the period.

Diluted earnings per share is calculated by adjusting the effects of all dilutive potential ordinary shares.

(18) New standards and interpretations not yet adopted

New standards, interpretations, and amendments to standards and interpretations that have not been adopted in the fiscal year ended December 31, 2022, and which the Group has yet to apply to the preparation of the consolidated financial statements, are mainly as follows.

The potential impacts on the consolidated financial statements by the application of standards and interpretations are currently being evaluated and cannot be estimated as of the date of the report.

IFRS	Title	Effective date (annual periods beginning on or after)	Adoption by the Group (annual periods ending)	Summaries of new IFRS and amendments
IAS 1 (amended in February 2021)	Presentation of Financial Statements	January 1, 2023	Fiscal year ending December 2023	Disclosure of Accounting Policies
IAS 8 (amended in February 2021)	Accounting Policies, Changes in Accounting Estimates and Errors	January 1, 2023	Fiscal year ending December 2023	Definition of Accounting Estimates
IAS 12 (amended in May 2021)	Income Taxes	January 1, 2023	Fiscal year ending December 2023	Deferred Tax related to Assets and Liabilities arising from a Single Transaction
IFRS 16 (amended in September 2022)	Leases	January 1, 2024	Fiscal year ending December 2024	Lease Liability in a Sale and Leaseback
IAS 1 (amended in July 2020)	Presentation of Financial Statements	January 1, 2024	Fiscal year ending December 2024	Classification of Liabilities as Current or Non-current
IAS 1 (amended in October 2022)	Presentation of Financial Statements	January 1, 2024	Fiscal year ending December 2024	Non-current Liabilities with Covenants

Note 4: Segment information

The Group's reportable segments are components of the Group for which discrete financial information is available, and whose operating results are reviewed regularly by the Group's chief operating decision maker to make decisions about resources to be allocated to the segment and assess performance.

The Group had five in-house companies by product and service: Architectural Glass Europe & Americas, Architectural Glass Asia Pacific, Automotive, Electronics and Chemicals. Each in-house company operates worldwide, formulating comprehensive domestic and overseas strategies for its products and services. (The Group has divided Building & Industrial Glass Company into Architectural Glass Europe & Americas Company and Architectural Glass Asia Pacific Company on July 1st 2021)

Architectural Glass Europe & Americas, Architectural Glass Asia Pacific and Automotive share the same float glass manufacturing facilities (glass melting furnace) etc., which are the largest assets and situated the highest upstream in the supply chain. The three in-house companies share assets and liabilities, and ratio of utilization is influenced by fluctuations of demand and supply. Considering these situations, it is difficult to divide financial statements for the three in-house companies. Therefore, the Group prepares the financial statements of Architectural Glass Europe & Americas, Architectural Glass Asia Pacific and Automotive as the Glass segment. In addition, decisions on assigning management resources are closely tied to the results of each business and inseparable from their performance evaluation. Therefore, with the participation of presidents of three in-house companies, the Group has established a "Glass Segment Council," which primarily functions to maintain synergies and maximize overall production in the Glass segment, and collaborates to maximize profits for the Group. Based on these circumstances, the Group reports the Glass segment as one.

Thus, the Group has three reportable segments: Glass, Electronics, and Chemicals.

Due to a change of corporate structure, the Company amended the reportable segment of cover glass for carmounted displays from the "Electronics" and "Glass" segment to the "Glass" segment in FY2022.

Segment information in FY2021 is based on the classification of reportable segments in FY2022.

The main products of each reportable segment are as follows.

Reportable segment	Main products
Glass	Float flat glass, Figured glass, Polished wired glass, Low-E glass, Decorative glass, Fabricated glass for architectural use (Heat Insulating/shielding glass, Disaster-resistant/Security glass, Fire-resistant glass, etc.), Automotive glass, Cover glass for car-mounted displays, etc.
Electronics	LCD glass substrates, OLED glass substrates, Specialty glass for display applications, Display related materials, Glass for solar power system, Fabricated glass for industrial use, Semiconductor process materials, Optoelectronic materials, Printed circuit board materials, Lighting glass products, Laboratory use ware, etc.
Chemicals	Polyvinyl chloride, Vinyl chloride monomer, Caustic soda, Urethane, Fluorinated resins, Water and oil repellents, Gases, Solvents, Pharmaceutical and agrochemical intermediates and active ingredients, Biotechnological products, Iodine-related products, etc.

(1) Reportable segments

FY2021 (Jan. 1 through Dec. 31, 2021)

(Unit: Millions of yen)

	Reportable segment						
	Glass	Electronics	Chemicals	Ceramics/ Others	Total	Adjustments	Amount reported on consolidated financial statements
Sales to external customers	¥732,230	¥303,049	¥629,487	¥32,615	¥1,697,383	¥ —	¥1,697,383
Intersegment sales	2,026	1,920	1,304	46,777	52,028	(52,028)	—
Total sales	734,257	304,969	630,792	79,392	1,749,411	(52,028)	1,697,383
Segment profit [Operating profit]	27,324	36,785	138,756	3,497	206,363	(195)	206,168
Profit for the year	—	—	—	—	—	—	159,062
Other items							
Depreciation and amortization	54,588	60,328	49,958	1,991	166,866	(110)	166,756
Impairment losses [Non-financial assets]	19,022	15,401	26	—	34,450	—	34,450
Capital expenditures	50,882	69,593	94,180	2,150	216,806	(303)	216,503
Investments accounted for using equity method	22,029	1,487	4,011	3,669	31,197	—	31,197

The amounts of intersegment sales are primarily based on market prices and manufacturing cost.

“Ceramics/Others” mainly handles ceramics products, logistics and financial services.

Moreover, the above amounts of impairment losses (non-financial assets) include the amounts of impairment losses recorded as expenses for restructuring programs.

FY2022 (Jan. 1 through Dec. 31, 2022)

(Unit: Millions of yen)

	Reportable segment						
	Glass	Electronics	Chemicals	Ceramics/ Others	Total	Adjustments	Amount reported on consolidated financial statements
Sales to external customers	**¥900,354**	**¥304,918**	**¥793,159**	**¥37,442**	**¥2,035,874**	**¥ —**	**¥2,035,874**
Intersegment sales	**1,174**	**2,294**	**2,027**	**49,159**	**54,656**	**(54,656)**	**—**
Total sales	**901,528**	**307,212**	**795,187**	**86,602**	**2,090,530**	**(54,656)**	**2,035,874**
Segment profit [Operating profit]	**22,893**	**14,677**	**142,944**	**3,678**	**184,193**	**(251)**	**183,942**
Profit for the year	**—**	**—**	**—**	**—**	**—**	**—**	**22,505**
Other items							
Depreciation and amortization	**56,466**	**68,361**	**59,034**	**1,940**	**185,802**	**(146)**	**185,656**
Impairment losses [Non-financial assets]	**22,152**	**106,085**	**84**	**125**	**128,447**	**—**	**128,447**
Capital expenditures	**47,341**	**79,995**	**107,988**	**1,442**	**236,767**	**(214)**	**236,553**
Investments accounted for using equity method	**18,134**	**1,168**	**3,852**	**1,453**	**24,609**	**—**	**24,609**

The amounts of intersegment sales are primarily based on market prices and manufacturing cost.

“Ceramics/Others” mainly handles ceramics products, logistics and financial services.

Moreover, the above amounts of impairment losses (non-financial assets) include the amounts of impairment losses recorded as expenses for restructuring programs.

(2) Products and services

Disclosure is omitted as the same information is shown in segment information.

(3) Major customers

Disclosure is omitted as sales to external customers did not exceed 10% to any single external customer.

(4) Geographical segments

The analysis of sales by geographical area for the fiscal years ended December 31, 2021 and 2022 is as follows:

(Unit: Millions of yen)

	FY2021 (Jan. 1 through Dec. 31, 2021)	**FY2022 (Jan. 1 through Dec. 31, 2022)**
Japan	¥ 544,520	**¥ 615,189**
Asia	579,850	**687,523**
America	175,015	**207,750**
Europe	397,997	**525,412**
Total	¥1,697,383	**¥2,035,874**

Note: Sales are based on the location of each company, and “Brazil” is included in “America.”

The analysis of non-current assets by geographical area as of December 31, 2021 and 2022 is as follows:

(Unit: Millions of yen)

	FY2021 (as of December 31, 2021)	**FY2022 (as of December 31, 2022)**
Japan	¥ 416,129	**¥ 449,426**
Asia	696,967	**630,074**
America	109,407	**136,740**
Europe	292,629	**308,258**
Total	¥1,515,134	**¥1,524,500**

Notes: 1. Non-current assets do not include “Investments accounted for using equity method,” “other financial assets,” “deferred tax assets” and “Prepaid pension expenses.”
2. Non-current assets are based on the location of assets, and Brazil is included in “America.”

Note 5: Cash and cash equivalents

(Unit: Millions of yen)

	FY2021 (as of December 31, 2021)	**FY2022 (as of December 31, 2022)**
Cash on hand and deposits	¥209,761	**¥214,503**
Negotiable certificates of deposit	5	**6**
Time deposits due over three months	(13,936)	**(4,793)**
Total	¥195,830	**¥209,716**

The balances of cash and cash equivalents on the consolidated statements of financial position as of December 31, 2021 and 2022 agree to the respective balances on the consolidated statements of cash flows.

Note 6: Trade and other receivables

Trade receivables

(Unit: Millions of yen)

	FY2021 (as of December 31, 2021)	**FY2022 (as of December 31, 2022)**
Notes receivable	¥ 17,077	**¥ 32,689**
Accounts receivable	280,633	**285,574**
Allowance for doubtful accounts	(2,548)	**(2,455)**
Total	¥295,161	**¥315,808**

The Group’s exposure to currency risk with respect to trade receivables, and impairment losses, are presented in Note 26 “Financial instruments.”

Other receivables

(Unit: Millions of yen)

	FY2021 (as of December 31, 2021)	**FY2022 (as of December 31, 2022)**
Other accounts receivable	¥15,189	**¥16,262**
Others	50,283	**44,351**
Total	¥65,472	**¥60,614**

Note 7: Inventories

(Unit: Millions of yen)

	FY2021 (as of December 31, 2021)	**FY2022 (as of December 31, 2022)**
Merchandise and finished goods	¥130,330	**¥165,665**
Work in progress	62,660	**85,854**
Raw materials and supplies	137,110	**184,997**
Total	¥330,101	**¥436,516**

The amount of write-downs of inventories recognized as expenses and the amount of reversal of write-downs are as follows:

(Unit: Millions of yen)

	FY2021 (Jan. 1 through Dec. 31, 2021)	**FY2022 (Jan. 1 through Dec. 31, 2022)**
Amount of write-downs of inventories recognized as expenses	¥(7,839)	**¥(12,567)**
Amount of reversal of write-downs	6,738	**7,650**

Note 8: Property, plant and equipment

Reconciliation

"Construction in progress" includes expenditures on property, plant and equipment under construction.

The amount in "additions" for each property, plant and equipment includes the amount which is transferred from "construction in progress."

"Depreciation" is recorded in "cost of sales" and "selling, general and administrative expenses" on the consolidated statements of profit or loss.

FY2021 (Jan. 1 through Dec. 31, 2021)

Cost

(Unit: Millions of yen)

	Buildings and structures	Machinery, equipment and vehicles	Tools, fixtures and fittings	Land	Construction in progress	Total
Balance as of January 1	¥796,863	¥2,206,680	¥142,011	¥91,735	¥163,288	¥3,400,579
Additions	45,371	167,542	11,839	790	(18,993)	206,550
Acquisitions due to business combinations	—	48	22	—	—	70
Disposals or sales	(20,405)	(90,039)	(6,682)	(2,225)	(1,659)	(121,013)
Net foreign exchange differences on translation	33,271	111,124	6,150	3,334	10,461	164,342
Others	(111)	1,804	88	(47)	24	1,758
Balance as of December 31	¥854,990	¥2,397,159	¥153,429	¥93,587	¥153,121	¥3,652,288

Accumulated depreciation and impairment losses

(Unit: Millions of yen)

	Buildings and structures	Machinery, equipment and vehicles	Tools, fixtures and fittings	Land	Construction in progress	Total
Balance as of January 1	¥(431,057)	¥(1,596,634)	¥(118,902)	¥(4,457)	¥(2,642)	¥(2,153,694)
Depreciation	(31,943)	(112,475)	(10,193)	(874)	—	(155,486)
Impairment losses	(3,325)	(16,023)	(68)	(372)	(63)	(19,853)
Disposals or sales	15,882	72,075	6,200	366	13	94,538
Net foreign exchange differences on translation	(14,664)	(73,404)	(5,139)	(169)	(141)	(93,518)
Others	(323)	(1,618)	(631)	19	2,150	(404)
Balance as of December 31	¥(465,431)	¥(1,728,080)	¥(128,736)	¥(5,487)	¥ (683)	¥(2,328,419)

Carrying amounts

(Unit: Millions of yen)

	Buildings and structures	Machinery, equipment and vehicles	Tools, fixtures and fittings	Land	Construction in progress	Total
Balance as of January 1	¥365,806	¥610,046	¥23,108	¥87,277	¥160,646	¥1,246,885
Balance as of December 31	¥389,559	¥669,079	¥24,693	¥88,099	¥152,437	¥1,323,868

FY2022 (Jan. 1 through Dec. 31, 2022)

Cost

(Unit: Millions of yen)

	Buildings and structures	Machinery, equipment and vehicles	Tools, fixtures and fittings	Land	Construction in progress	Total
Balance as of January 1	**¥854,990**	**¥2,397,159**	**¥153,429**	**¥ 93,587**	**¥153,121**	**¥3,652,288**
Additions	**55,127**	**88,384**	**12,018**	**3,931**	**63,816**	**223,277**
Acquisitions due to business combinations	**205**	**109**	**17**	**42**	**—**	**374**
Disposals or sales	**(15,775)**	**(46,686)**	**(4,411)**	**(618)**	**(790)**	**(68,281)**
Net foreign exchange differences on translation	**45,404**	**147,066**	**7,194**	**4,551**	**7,563**	**211,782**
Others	**(976)**	**1,197**	**—**	**—**	**—**	**220**
Balance as of December 31	**¥938,976**	**¥2,587,230**	**¥168,249**	**¥101,493**	**¥223,710**	**¥4,019,661**

Accumulated depreciation and impairment losses

(Unit: Millions of yen)

	Buildings and structures	Machinery, equipment and vehicles	Tools, fixtures and fittings	Land	Construction in progress	Total
Balance as of January 1	**¥(465,431)**	**¥(1,728,080)**	**¥(128,736)**	**¥(5,487)**	**¥ (683)**	**¥(2,328,419)**
Depreciation	**(36,510)**	**(125,398)**	**(10,560)**	**(861)**	**—**	**(173,331)**
Impairment losses	**(30,057)**	**(48,492)**	**(62)**	**—**	**(15,461)**	**(94,074)**
Disposals or sales	**13,574**	**37,839**	**4,014**	**160**	**20**	**55,608**
Net foreign exchange differences on translation	**(22,042)**	**(98,812)**	**(6,131)**	**(215)**	**(128)**	**(127,330)**
Others	**(150)**	**(1,177)**	**(16)**	**—**	**—**	**(1,343)**
Balance as of December 31	**¥(540,617)**	**¥(1,964,121)**	**¥(141,493)**	**¥(6,404)**	**¥(16,253)**	**¥(2,668,892)**

Carrying amounts

(Unit: Millions of yen)

	Buildings and structures	Machinery, equipment and vehicles	Tools, fixtures and fittings	Land	Construction in progress	Total
Balance as of January 1	**¥389,559**	**¥669,079**	**¥24,693**	**¥88,099**	**¥152,437**	**¥1,323,868**
Balance as of December 31	**¥398,359**	**¥623,108**	**¥26,755**	**¥95,089**	**¥207,457**	**¥1,350,769**

Note 9: Goodwill and intangible assets

Reconciliation

Cost

(Unit: Millions of yen)

	FY2021 (Jan. 1 through Dec. 31, 2021)			
		Intangible assets		
	Goodwill	Customer relationships	Other	Total
Balance as of January 1	¥139,387	¥51,274	¥140,186	¥191,460
Additions	—	—	9,952	9,952
Additions through business combinations	—	—	—	—
Disposals or sales	—	—	(3,732)	(3,732)
Net foreign exchange differences on translation	4,852	3,103	3,884	6,987
Others	114	—	—	—
Balance as of December 31	¥144,354	¥54,377	¥150,290	¥204,668

(Unit: Millions of yen)

	FY2022 (Jan. 1 through Dec. 31, 2022)			
		Intangible assets		
	Goodwill	Customer relationships	Other	Total
Balance as of January 1	**¥144,354**	**¥54,377**	**¥150,290**	**¥204,668**
Additions	**—**	**—**	**13,276**	**13,276**
Additions through business combinations	**—**	**—**	**16**	**16**
Disposals or sales	**—**	**—**	**(5,317)**	**(5,317)**
Net foreign exchange differences on translation	**12,420**	**6,220**	**6,927**	**13,148**
Others	**124**	**—**	**—**	**—**
Balance as of December 31	**¥156,899**	**¥60,598**	**¥165,193**	**¥225,791**

Accumulated amortization and impairment losses

(Unit: Millions of yen)

	FY2021 (Jan. 1 through Dec. 31, 2021)			
		Intangible assets		
	Goodwill	Customer relationships	Other	Total
Balance as of January 1	¥(21,323)	¥ (8,120)	¥(110,679)	¥(118,800)
Amortization	—	(3,348)	(7,921)	(11,269)
Impairment losses	(9,693)	(2,350)	(2,552)	(4,903)
Disposals or sales	—	—	3,557	3,557
Net foreign exchange differences on translation	(741)	(566)	(2,499)	(3,065)
Others	320	—	(273)	(273)
Balance as of December 31	¥(31,438)	¥(14,387)	¥(120,368)	¥(134,755)

(Unit: Millions of yen)

	FY2022 (Jan. 1 through Dec. 31, 2022)			
		Intangible assets		
	Goodwill	Customer relationships	Other	Total
Balance as of January 1	**¥(31,438)**	**¥(14,387)**	**¥(120,368)**	**¥(134,755)**
Amortization	**—**	**(3,357)**	**(8,966)**	**(12,324)**
Impairment losses	**(29,143)**	**(4,640)**	**(589)**	**(5,230)**
Disposals or sales	**—**	**—**	**5,196**	**5,196**
Net foreign exchange differences on translation	**(3,549)**	**(1,856)**	**(5,518)**	**(7,374)**
Others	**—**	**—**	**(14)**	**(14)**
Balance as of December 31	**¥(64,130)**	**¥(24,241)**	**¥(130,260)**	**¥(154,501)**

Carrying amounts

	(Unit: Millions of yen)			
	FY2021 (Jan. 1 through Dec. 31, 2021)			
		Intangible assets		
	Goodwill	Customer relationships	Other	Total
Balance as of January 1	¥118,063	¥43,153	¥29,506	¥72,660
Balance as of December 31	¥112,916	¥39,990	¥29,922	¥69,913

	(Unit: Millions of yen)			
	FY2022 (Jan. 1 through Dec. 31, 2022)			
		Intangible assets		
	Goodwill	Customer relationships	Other	Total
Balance as of January 1	**¥112,916**	**¥39,990**	**¥29,922**	**¥69,913**
Balance as of December 31	**¥ 92,768**	**¥36,356**	**¥34,933**	**¥71,290**

Amortization is recorded in "cost of sales" and "selling, general and administrative expenses" on the consolidated statements of profit or loss.

Note 10: Leases

The Group leases certain buildings, production facilities, etc. and accounts for them based on the terms of contract.

(1) Right-of-use assets

	(Unit: Millions of yen)				
	FY2021 (Jan. 1 through Dec. 31, 2021)				
	Buildings and structures	Machinery, equipment and vehicles	Tools, fixtures and fittings	Land	Total
Additions	¥10,137	¥ 2,883	¥ 599	¥ 252	¥ 13,874
Depreciation	(9,039)	(3,212)	(467)	(874)	(13,755)
Balance as of December 31	¥53,760	¥ 9,170	¥ 819	¥ 7,377	¥ 71,128

	(Unit: Millions of yen)				
	FY2022 (Jan. 1 through Dec. 31, 2022)				
	Buildings and structures	Machinery, equipment and vehicles	Tools, fixtures and fittings	Land	Total
Additions	**¥ 14,756**	**¥ 1,947**	**¥ 263**	**¥ 724**	**¥ 17,692**
Depreciation	**(10,114)**	**(3,090)**	**(511)**	**(861)**	**(14,578)**
Balance as of December 31	**¥ 53,275**	**¥ 7,940**	**¥ 561**	**¥7,820**	**¥ 69,597**

(2) Lease liabilities

The contractual maturity of the lease liabilities is described in Note 26 "Financial instruments (3) Liquidity risk."

(3) Amounts recognized in profit or loss

	(Unit: Millions of yen)	
	FY2021 (Jan. 1 through Dec. 31, 2021)	**FY2022 (Jan. 1 through Dec. 31, 2022)**
Interest on lease liabilities	¥ (2,261)	**¥ (2,332)**
Expenses related to short-term leases and leases of low-value assets	(12,773)	**(12,220)**

(4) Amounts recognized in the consolidated cash flow statement

Total cash outflows for leases are ¥16,337 million and ¥28,592 million for the fiscal years ended December 31, 2021 and 2022, respectively.

Note 11: Impairment of non-financial assets

(1) Impairment losses

When calculating impairment losses, the Group performs grouping of assets into a cash-generating unit, based on business units. The cash-generating unit is the smallest identifiable group of assets that generates largely independent cash inflows. The recoverable amount of a cash-generating unit is recorded as the higher of its value in use or fair value less costs of disposal. Value in use is calculated based on the major assumptions. On an annual basis, future cash flows for each cash-generating unit are based on the most recent budgets and medium-term business plans, while future cash flows for subsequent periods take into account the growth potential of businesses. The cash flow projection periods are set appropriately according to the business of each cash-generating unit. The discount rate applied to each cash-generating unit is calculated mainly based on the pre-tax weighted average cost of capital and adjusted to properly reflect risks and other factors related to the business using information from external and internal sources. The fair value less costs of disposal is calculated using techniques such as the market approach and the cost approach.

During the fiscal year ended December 31, 2021, the Group recognized the following impairment losses.

(Unit: Millions of yen)

		FY2021 (Jan. 1 through Dec. 31, 2021)			
Reportable segment	Cash-generating unit	Property, plant and equipment	Goodwill	Intangible assets	Total
Glass	Automotive glass business in Europe	¥16,523	¥1,177	¥ 967	¥18,668
	Architectural glass business in Europe	—	354	—	354
	Subtotal	16,523	1,531	967	19,022
Electronics	Printed circuit board materials business	2,781	8,161	3,818	14,761
	Others	548	—	91	640
	Subtotal	3,330	8,161	3,910	15,401
Chemicals	Others	—	—	26	26
	Subtotal	—	—	26	26
Total		¥19,853	¥9,693	¥4,903	¥34,450

In the automotive glass business in Europe, which is included in the Glass segment, the Group has recognized recurring operating losses beginning with the fiscal year before last and the business environment has deteriorated primarily due to a decrease in automotive production volume caused by the spread of the novel coronavirus disease (COVID-19) and insufficient supply of semiconductors, which resulted in an indication of impairment for the cash-generating unit to which its property, plant and equipment belong. Due to revisions in the business plan and the discount rate from the fiscal year before last, the Group has performed an impairment test. As a result, since the recoverable amount calculated based on the value in use was below the carrying amount of the cash-generating unit, the Group has recognized an impairment loss of ¥18,668 million. In the five-year business plan of the automotive glass business in Europe, which formed the basis for estimating the value in use, the key assumptions were the prospects for an increase in sales volume on the premise that automotive production volume would gradually recover from the impact of shortages in the supply of semiconductors, improved productivity, and cost reductions. In addition, the discount rate (pre-tax) used to determine the outcome of the impairment test was 12%.

Moreover, the Group has identified indications of impairment, including a marked decrease in profitability, for business assets, including goodwill, in certain operations of the printed circuit board materials business, which is included in the Electronics segment, given diminished demand in the Chinese market largely due to the effects of U.S.-China trade friction. Considering the financial results outlook and prospects for recoverability going forward, the Group has recognized an impairment loss of ¥14,761 million. The recoverable amount was calculated by discounting future cash flows using a discount rate (pre-tax) of 14% based on the value in use.

In addition to the foregoing, the Group has identified indications of impairment including decreases in profitability with respect to certain assets in various businesses included in each segment. Considering the financial results outlook and prospects for recoverability going forward, the Group has recognized an impairment loss of ¥1,020 million.

During the fiscal year ended December 31, 2022, the Group recognized the following impairment losses.

(Unit: Millions of yen)

Reportable segment	Cash-generating unit	FY2022 (Jan. 1 through Dec. 31, 2022) Property, plant and equipment	Goodwill	Intangible assets	Total
Glass	Automotive glass business in Europe (Western and Central Europe)	¥ 6,323	¥ —	¥ 377	¥ 6,700
	Architectural glass business in Russia	9,565	289	67	9,922
	Automotive glass business in Russia	3,637	—	26	3,664
	Others	1,863	—	0	1,864
	Subtotal	21,390	289	472	22,152
Electronics	Display business	69,356	4,317	—	73,673
	Printed circuit board materials business, etc.	2,931	24,535	4,756	32,223
	Others	186	—	1	187
	Subtotal	72,474	28,853	4,757	106,085
Chemicals	Others	84	—	—	84
	Subtotal	84	—	—	84
Ceramics and others	Others	125	—	—	125
	Subtotal	125	—	—	125
Total		¥94,074	¥29,143	¥5,230	¥128,447

In the display business, which is included in the Electronics segment, the Group has recognized a deteriorated operating result primarily due to the impact of slow sales of televisions, personal computers and related items, and the increased cost caused by the weaker yen and the soaring raw materials and fuel prices, which resulted in an indication of impairment for the cash-generating unit to which its business assets belong. The Group has performed an impairment test. As a result, since the recoverable amount based on the fair value less costs of disposal was less than the carrying amount of the cash-generating unit, the Group has recognized an impairment loss of ¥73,673 million. In the valuation of fair value less costs of disposal, the Group selects the evaluation techniques, the calculation methods and input data used when adopting such as the market approach and the cost approach. Land, buildings, machinery and equipment and others (excluding precious metals) are mainly measured by the market approach and the cost approach, which include unobservable inputs such as third-party valuations, and are classified as Level 3 in the fair value hierarchy. Precious metals included in machinery and equipment are measured by the market approach, which is based on quoted prices in active markets, and are classified as Level 1 in the fair value hierarchy. The property, plant and equipment amounted to ¥306,413 million at the end of the reporting period.

Product and other transactions and provision of information technologies and other services between the Group companies in Western and Central Europe and Russia have been significantly restricted in connection due to the deteriorating situation in Russia and Ukraine. As a result, the cash-generating units were changed for the current fiscal year. With this change, the architectural glass business and the automotive glass business in Russia were separated from the architectural glass business and the automotive glass business in Europe, respectively. Furthermore, the automotive glass business in Europe (Western and Central Europe), which is included in the Glass segment, has recognized recurring operating losses since before the previous fiscal year, and the business environment has further deteriorated primarily due to slow automotive demand caused by the situation in Russia and Ukraine, which resulted in an indication of impairment for the cash-generating unit to which its business assets belong. Due to revisions in the business plan and the discount rate from the previous fiscal year, the Group has performed an impairment test. As a result, since the recoverable amount calculated based on the value in use was less than the carrying amount of the cash-generating unit, the Group recognized an impairment loss of ¥6,700 million. In the five-year business plan of the automotive glass business in Europe, which formed the basis for estimating the value in use, the key assumptions were the prospects for an increase in sales volume on the premise that automotive production volume would gradually recover, improved productivity, and cost reductions. In addition, the discount rate (pre-tax) used to determine the outcome of the impairment test was 14%. The property, plant and equipment amounted to ¥51,527 million at the end of the reporting period. Moreover, the economic environment of the architectural and automotive glass businesses in Russia deteriorated due to the prolonged Russian-Ukraine situation. Consequently, the Group has identified indications of impairment for the cash-generating unit to which its business assets belong, including goodwill. The Group has performed an impairment test. As a result, since the recoverable amount calculated based on the value in use was less than the carrying amount of the cash-generating unit, the Group has recognized impairment losses of ¥9,922 million in the architectural glass business and ¥3,664 million in the automotive glass business. In the five-year business plan of the architectural and automotive glass businesses in Russia, which formed the basis for estimating the value in use, the key assumptions were forecasts of sales volume in light of the current economic situation. In addition, the discount rate (pre-tax) used to determine the outcome of the impairment test was 28% for both businesses. The property, plant and equipment amounted to ¥8,339 million for architectural glass and ¥760 million for automotive glass at the end of the reporting period.

Moreover, the Group has identified indications of impairment, such as a significant decline in profitability, for business assets including goodwill in the super high-end CCL business and the industrial films business (printed circuit board materials business, etc.) included in the Electronics segment, in light of a decline in demand due to the impacts of U.S.-China trade friction and the spread of COVID-19 in China. As a result of comparing their carrying amounts and recoverable amounts, the Group has recognized impairment losses of ¥32,223 million. The recoverable amounts are calculated by discounting future cash flows at a discount rate (pre-tax) of 16% based on the value in use.

In addition to the foregoing, the Group has identified indications of impairment including decreases in profitability with respect to certain assets in various businesses included in each segment. Considering the financial results outlook and prospects for recoverability going forward, the Group has recognized impairment losses of ¥2,261 million.

Impairment losses are included in “other expenses” on the consolidated statements of profit or loss.

Non-financial assets excluding inventories and deferred tax assets reported on the Group’s consolidated statements of financial position may become subject to impairment loss if a recoverable amount of any such asset has fallen below the carrying amount due to lower profitability, changes in fair value or other such circumstances going forward. Such a scenario could significantly affect the amount of non-financial assets on the Group’s consolidated financial statements in the fiscal year ending December 31, 2023.

(2) Impairment test of cash-generating units including goodwill

The total carrying amount of goodwill allocated to each cash-generating unit is as follows:

(Unit: Millions of yen)

Reportable Segment	FY2021 (as of December 31, 2021)	**FY2022 (as of December 31, 2022)**
Glass	¥ 24,277	**¥25,185**
Electronics	29,630	**2,736**
Chemicals	59,008	**64,846**
Total	¥112,916	**¥92,768**

The goodwill arising from the acquisition of AGC Biologics A/S and AGC Biologics, Inc. and AGC Biologics S.p.A., which are contract development and manufacturing organizations (CDMOs) offering biologically active pharmaceutical ingredient (API) and gene and cell therapy pharmaceutical manufacturing services, is included in the corresponding amount for the Chemicals segment. The amounts were ¥52,908 million and ¥58,335 million as of December 31, 2021 and 2022, respectively. In testing for the impairment of goodwill from this acquisition, the Group calculated the value in use by adding the perpetuity value to the future five-year cash flows, which takes into account the average growth rate of the biopharmaceutical market (estimated at 8%), expansion of production capacity through the introduction of a new type of culture facility for the development and manufacture of gene and cell therapy drugs on contract, and growth due to synergy effects within the Group. In addition, the discount rates (pre-tax) used to determine the outcome of the impairment test were 15% and 17% for the fiscal years ended December 31, 2021 and 2022, respectively. In the event that the growth rate falls below the projected rate, or the discount rate increases by over 15 percentage points and over 11 percentage points during the fiscal years ended December 31, 2021 and 2022, respectively, an impairment loss could be incurred.

In the fiscal year ended December 31, 2021, goodwill arising from the acquisition of the super high-end Copper Clad Laminate (CCL) business and the industrial films business (printed circuit board materials business, etc.), which was included in the Electronics segment, amounted to ¥22,911 million. In testing for the impairment of cash-generating units including this goodwill, since the recoverable amount exceeded the carrying amount of cash-generating units including goodwill and intangible assets, no impairment loss was recognized. In the fiscal year ended December 31, 2022, the Group recognized impairment losses as stated in “(1) Impairment losses,” and recorded an impairment loss of ¥24,535 million on this goodwill.

Furthermore, in the fiscal year ended December 31, 2022, the Group recognized impairment losses in the display business, which is included in the Electronics segment, and in the architectural glass business in Russia, which is included in the Glass segment, as stated in “(1) Impairment losses.” For goodwill in these businesses, the Group has recorded impairment losses of ¥4,317 million in the display business and ¥289 million in the architectural glass business in Russia.

The main discount rates (pre-tax) used for impairment tests for cash-generating units including goodwill, except for the above, ranged from 6 to 14% and 6 to 9% for the fiscal years ended December 31, 2021 and 2022, respectively.

Note 12: Equity method affiliates

The carrying amounts of Investments accounted for using equity method are as follows:

(Unit: Millions of yen)

	FY2021 (as of December 31, 2021)	**FY2022 (as of December 31, 2022)**
Investments accounted for using equity method	¥31,197	**¥24,609**

Share of profit and other comprehensive income of associates and joint ventures accounted for using the equity method are as follows:

(Unit: Millions of yen)

	FY2021 (Jan. 1 through Dec. 31, 2021)	**FY2022 (Jan. 1 through Dec. 31, 2022)**
Share of profit (loss) of associates and joint ventures accounted for using equity method	¥2,292	**¥1,236**
Share of other comprehensive income of associates and joint ventures accounted for using equity method	16	**8**
Total	¥2,308	**¥1,244**

During the fiscal years ended December 31, 2021 and 2022, there was no individually significant associate or joint venture accounted for using the equity method.

Note 13: Deferred tax assets and liabilities

(1) Unrecognized deferred tax assets

The Group recognizes deferred tax assets, taking into account deductible temporary differences, projected future taxable profit and tax planning. However, deferred tax assets have not been recognized for the following items:

(Unit: Millions of yen)

	FY2021 (as of December 31, 2021)	**FY2022 (as of December 31, 2022)**
Carry-forwards of unused tax losses	¥346,108	**¥378,306**
Deductible temporary differences	309,220	**344,063**
Total	¥655,328	**¥722,369**

The amounts of carry-forwards of unused tax losses, for which deferred tax assets have not been recognized, and the expiries of the carry-forwards are as follows:

(Unit: Millions of yen)

	FY2021 (as of December 31, 2021)	**FY2022 (as of December 31, 2022)**
1st year	¥ 3,501	**¥ 2,516**
2nd year	2,874	**2,026**
3rd year	1,212	**2,701**
4th year	3,262	**12,474**
5th year and thereafter	335,256	**358,588**
Total	¥346,108	**¥378,306**

(2) Unrecognized deferred tax liabilities

As of December 31, 2021 and 2022, the total amounts of taxable temporary differences for which deferred tax liabilities have not been recognized, which relate to investment in subsidiaries, associates and interest in joint arrangements, were ¥135,808 million and ¥152,889 million, respectively.

The Group has not recognized deferred tax liabilities relating to the preceding taxable temporary differences because it 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.

(3) Recognized deferred tax assets and liabilities

Deferred tax assets and liabilities were attributable to the following items:

(Unit: Millions of yen)

	FY2021 (as of December 31, 2021)	**FY2022 (as of December 31, 2022)**
Deferred tax assets		
Post-employment benefit liabilities	¥ 8,208	**¥ 10,123**
Depreciation	10,025	**10,082**
Impairment losses	1,122	**18,308**
Carry-forwards of unused tax losses	24,760	**19,830**
Lease liabilities	14,097	**15,309**
Others	18,583	**20,437**
Total deferred tax assets	76,798	**94,091**
Deferred tax liabilities		
Financial assets measured at fair value through other comprehensive income	(17,319)	**(10,570)**
Gain on establishment of trust for retirement benefits	(5,034)	**(3,544)**
Depreciation	(22,215)	**(19,340)**
Deferred capital gain reserve	(3,923)	**(6,832)**
Right-to-use assets	(13,801)	**(14,980)**
Others	(22,706)	**(26,896)**
Total deferred tax liabilities	(85,001)	**(82,164)**
Net deferred tax assets	¥ (8,203)	**¥ 11,926**

(4) Increase and decrease of deferred tax assets and liabilities

Increase and decrease of deferred tax assets and liabilities are as follows:

(Unit: Millions of yen)

	FY2021 (as of December 31, 2021)	**FY2022 (as of December 31, 2022)**
Balance as of January 1 (net amount)	¥ (9,209)	**¥ (8,203)**
Recognized in profit or loss	6,742	**19,103**
Recognized in other comprehensive income	(11,533)	**(4,472)**
Others (business combinations, currency fluctuation and others)	5,797	**5,499**
Balance as of December 31 (net amount)	¥ (8,203)	**¥11,926**

Note 14: Trade and other payables

Trade payables

(Unit: Millions of yen)

	FY2021 (as of December 31, 2021)	**FY2022 (as of December 31, 2022)**
Notes payable	¥ 11,663	**¥ 11,290**
Trade accounts payable	184,772	**203,042**
Total	¥196,435	**¥214,332**

Other payables

(Unit: Millions of yen)

	FY2021 (as of December 31, 2021)	**FY2022 (as of December 31, 2022)**
Other accounts payable	¥ 76,801	**¥ 83,061**
Accrued expenses	47,510	**52,676**
Others	74,856	**76,117**
Total	¥199,169	**¥211,855**

Note 15: Interest-bearing debt

(Unit: Millions of yen)

	FY2021 (as of December 31, 2021)	**FY2022 (as of December 31, 2022)**
Short-term bank loans	¥ 36,820	**¥ 67,897**
Commercial paper	—	**1,853**
Long-term bank loans due within one year	76,668	**89,204**
Corporate bonds due within one year	—	**19,994**
Short-term lease liabilities	11,930	**13,055**
Total current liabilities	125,419	**192,005**
Long-term bank loans	357,173	**351,098**
Corporate bonds	59,910	**39,941**
Long-term lease liabilities	60,689	**67,197**
Total non-current liabilities	477,774	**458,237**
Total interest-bearing debt	¥603,194	**¥650,242**

Please see Note 26 "Financial instruments" for further information on the Group's interest rate risk, currency risk, and liquidity risk. Assets pledged as collateral are presented in Note 29 "Collateral."

(1) Bonds

Company	Name of bond	Date of issuance	**As of January 1, 2022 (Millions of yen)**	**As of December 31, 2022 (Millions of yen)**	Interest rate (% annum)(Note 2)	Collateral	Date of maturity
Asahi Glass Co., Ltd.	14th straight bond	Jun. 3, 2013	**¥19,989**	**¥ 19,994** (19,994)	1.01	None	Jun. 2, 2023
Asahi Glass Co., Ltd.	15th straight bond	May 29, 2017	**19,959**	**19,969**	0.31	None	May 28, 2027
AGC Inc.	1st straight bond	Oct. 12, 2018	**19,962**	**19,972**	0.23	None	Oct. 10, 2025
Total(Note 1)	—	—	**¥59,910** (—)	**¥ 59,935** (19,994)	—	—	—

Notes: 1. The component figures disclosed in parentheses in the "As of January 1, 2022" and "As of December 31, 2022" columns represent balances due within one year.
2. The interest rate column shows the coupon rates applicable to each bond. Accordingly, these rates are different from the effective annual interest rates.

(2) Borrowings

As of December 31, 2022, the weighted average effective interest rate for "short-term bank loans," "long-term bank loans due within one year" and "long-term bank loans" are 2.9%, 1.7% and 1.3% per annum, respectively.

The maturities of "long-term bank loans" are from 2024 to 2032.

(3) Liabilities arising from financing activities

The changes of liabilities arising from financing activities are as follows:

(Unit: Millions of yen)

	FY2021 (Jan. 1 through Dec. 31, 2021)				
	Borrowings	Commercial paper	Corporate bonds	Lease liabilities	Total liabilities arising from financing activities
Balance as of January 1	¥ 651,207	¥ 4,654	¥59,885	¥ 72,213	¥ 787,960
Cash flows	(194,427)	(5,049)	—	(16,337)	(215,814)
Non-cash changes					
Increase in finance lease liabilities	—	—	—	14,252	14,252
Foreign exchange differences	13,883	394	—	3,716	17,994
Changes in the scope of consolidation	—	—	—	(86)	(86)
Others	—	—	25	(1,137)	(1,111)
Balance as of December 31	¥ 470,662	¥ —	¥59,910	¥ 72,620	¥ 603,194

(Unit: Millions of yen)

	FY2022 (Jan. 1 through Dec. 31, 2022)				
	Borrowings	Commercial paper	Corporate bonds	Lease liabilities	Total liabilities arising from financing activities
Balance as of January 1	¥470,662	¥ —	¥59,910	¥ 72,620	¥603,194
Cash flows	13,929	1,782	—	(14,040)	1,671
Non-cash changes					
Increase in finance lease liabilities	—	—	—	18,143	18,143
Foreign exchange differences	23,607	71	—	4,843	28,521
Changes in the scope of consolidation	—	—	—	—	—
Others	—	—	25	(1,314)	(1,288)
Balance as of December 31	¥508,200	¥1,853	¥59,935	¥ 80,253	¥650,242

Note 16: Provisions

(Unit: Millions of yen)

	FY2021 (as of December 31, 2021)	**FY2022 (as of December 31, 2022)**
Provisions for restructuring costs	¥ 154	**¥ 92**
Other provisions	1,052	**1,217**
Total current liabilities	¥ 1,207	**¥ 1,310**
Provisions for restructuring costs	¥ 4,757	**¥ 8,422**
Other provisions	7,307	**9,360**
Total non-current liabilities	¥12,064	**¥17,783**

“Other provisions” consists of various provisions for undetermined obligation related to identifiable risks, such as asset retirement obligations and environment-related provisions.

There is no significant balance of asset retirement obligations as of December 31, 2021 and 2022.

A reconciliation of opening and closing balances for each class of provision is as follows:

(Unit: Millions of yen)

	FY2022 (Jan. 1 through Dec. 31, 2022)		
	Provisions for restructuring costs	Other provisions	Total
Balance as of January 1	¥ 4,912	¥ 8,360	¥13,272
Amounts increased during the period	8,701	4,219	12,920
Amounts used during the period	(4,964)	(1,587)	(6,551)
Unused amounts reversed during the period	(778)	(1,116)	(1,895)
Others	643	703	1,347
Balance as of December 31	¥ 8,515	¥ 10,578	¥19,093

During the fiscal year ended December 31, 2022, the Group recognized a provision for restructuring programs measured at estimated future losses arising from restructuring actions such as an expansion in the additional severance compensation program to improve the business structure and the reorganization of certain operations. The timing of the payment may be affected by future business plans.

Note 17: Employee benefits

The Group has the following retirement benefit plans: defined benefit corporate pension plans, employees' pension fund plans, lump-sum severance payment plans, all which are defined benefit pension plans, and defined contribution pension plan.

The level of defined benefit pension plans is determined based on a certain number of points conferred according to an individual employee's contribution during his or her period of service. Asset administration, investment, and benefits are provided mainly by corporate pension funds. The investment yield of the corporate pension is set in consideration of the sustainability of the plan.

(1) Defined benefit plans

The amounts for defined benefit plans recognized on the consolidated statements of financial position are as follows:

(Unit: Millions of yen)

	FY2021 (as of December 31, 2021)	**FY2022 (as of December 31, 2022)**
Present value of defined benefit obligations	¥(370,030)	**¥(329,245)**
Fair value of plan assets	376,416	**351,846**
Total	¥ 6,386	**¥ 22,601**
Prepaid pension expenses(Note)	¥ 60,191	**¥ 68,179**
Post-employment benefit liabilities	(53,805)	**(45,578)**

Note: Prepaid pension expenses are included in "other non-current assets" on the consolidated statements of financial position.

(Corporate pension plan of the Company)

The Company's pension plan is managed through a legally independent entity AGC Corporate Pension Fund (the "Fund"). The Fund has a Board of Representatives split evenly between representatives selected by the Company and representatives elected by the pension plan members through mutual vote. The representatives elect directors and a controller through mutual vote. After that, the president (the chairman of the Board of Representatives) is selected.

Under the Defined-Benefit Corporate Pension Act, the Company is obligated to make pension contributions to the Fund which provides pension benefits. The directors of the Fund are responsible for faithfully executing operations related to the administration and investment of pension reserves for the Fund in compliance with laws and regulations, any orders issued by the Minister of Health, Labour and Welfare, and the director-generals of Regional Bureaus of Health and Welfare based on laws and regulations, as well as the rules of the Fund and the resolutions of the Board of Representatives. Furthermore, directors are prohibited from engaging in any actions that could hinder proper administration and investment of the pension reserves for the purpose of furthering their own interests or the interests of third parties other than the Fund.

i) Changes in the present value of defined benefit obligations

(Unit: Millions of yen)

	FY2021 (Jan. 1 through Dec. 31, 2021)	**FY2022 (Jan. 1 through Dec. 31, 2022)**
As of January 1	¥(374,969)	**¥(370,030)**
Benefits paid by the plan	16,950	**16,170**
Current service cost	(11,518)	**(11,728)**
Interest cost	(3,298)	**(3,929)**
Past service cost and settlement	6,668	**(1,146)**
Actuarial gains and losses	1,214	**43,453**
Due to changes in demographic assumptions	(106)	**(1,163)**
Due to changes in financial assumptions	1,494	**44,443**
Others	(173)	**174**
Foreign exchange differences	(5,334)	**(2,411)**
Business combinations and disposals	50	**(145)**
Others	206	**521**
As of December 31	¥(370,030)	**¥(329,245)**

The weighted average duration of defined benefit obligations was mainly 15 years and 14 years as of December 31, 2021 and 2022, respectively.

ii) Changes in the fair value of plan assets

(Unit: Millions of yen)

	FY2021 (Jan. 1 through Dec. 31, 2021)	**FY2022 (Jan. 1 through Dec. 31, 2022)**
As of January 1	¥346,282	**¥376,416**
Employer contributions	11,073	**3,637**
Employee contributions	145	**151**
Benefits paid by the plan	(14,624)	**(13,852)**
Interest income(Note)	2,154	**2,900**
Settlement	(6,387)	**—**
Income related to plan assets (excluding interest income)	32,704	**(22,113)**
Foreign exchange differences	5,275	**5,228**
Business combinations and disposals	—	**—**
Others	(206)	**(521)**
As of December 31	¥376,416	**¥351,846**

Note: Interest income is measured as the fair value of plan assets multiplied by the discount rate.

The Group plans to contribute ¥3,572 million to retirement benefit plans during the fiscal year ending December 31, 2023.

In accordance with the rules of the Fund, every five years the Company is required to recalculate the amount of pension contributions, with the end of the Fund's business year set as the record date. This is to maintain the Fund's financial stability into the future.

In the recalculation process, the Company reviews the base rates related to the pension contributions (assumed interest rate, assumed mortality rate, assumed withdrawal rate, assumed salary increase rate, assumed number of new pension plan members, etc.) in order to re-examine the appropriateness of the pension contributions.

iii) Components of plan assets

Plan assets are invested with the aim of ensuring the sustainability of the defined benefit plans. Plan assets are invested mainly in bonds and equities, and are exposed to market risk in each area. The Group has formulated a policy on risk and return targets for the investment of plan assets. The Group properly monitors investment performance, and regularly reviews this policy, taking into account the funding status and market developments surrounding investments.

The components of plan assets are as follows:

(Unit: Millions of yen)

	FY2021 (as of December 31, 2021)			**FY2022 (as of December 31, 2022)**		
	Assets with quoted market prices in an active market	Assets without quoted market prices in an active market (Note)	Subtotal	Assets with quoted market prices in an active market	Assets without quoted market prices in an active market (Note)	Subtotal
Equity securities	¥ 84,987	¥ 62,387	¥147,375	**¥ 76,101**	**¥ 54,752**	**¥130,853**
Bonds	84,165	101,883	186,048	**75,191**	**100,446**	**175,638**
Others	5,565	37,427	42,993	**13,474**	**31,880**	**45,354**
Total	¥174,718	¥201,697	¥376,416	**¥164,767**	**¥187,079**	**¥351,846**

Note: Equity securities include privately placed investment trusts that do not have quoted market prices in an active market, and comprise publicly traded shares in Japan and overseas. Others mainly include cash equivalents and insurance contracts.

iv) Analysis of post-employment benefit expenses

Amounts recognized as expenses related to post-employment benefits are as follows:

(Unit: Millions of yen)

	FY2021 (Jan. 1 through Dec. 31, 2021)	**FY2022 (Jan. 1 through Dec. 31, 2022)**
Current service cost	¥(11,518)	**¥(11,728)**
Interest cost	(3,298)	**(3,929)**
Interest income	2,154	**2,900**
Past service cost and gains or losses on settlement	281	**(1,146)**
Total	¥(12,381)	**¥(13,904)**

The foregoing expenses are included in “cost of sales,” “selling, general and administrative expenses” and certain other accounts on the consolidated statements of profit or loss.

v) Actuarial assumptions

Principal actuarial assumptions as of December 31, 2021 and 2022 are as follows:

	FY2021 (as of December 31, 2021)	**FY2022 (as of December 31, 2022)**
Discount rate (%)	0.6	**1.4**

In addition to the above, actuarial assumptions include future salary increases, the mortality rate and the expected retirement rate.

vi) Sensitivity analysis of actuarial assumptions

The followings are changes in defined benefit obligations that would result from the changes below in the discount rate as of December 31, 2022. This analysis assumes that all other variables are held constant.

(Unit: Millions of yen)

	FY2022 (as of December 31, 2022)
Discount rate (0.5% increase)	**¥ 20,420**
Discount rate (0.5% decrease)	**(23,115)**

(2) Defined contribution plans

Amounts recognized as expenses related to defined contribution plans are as follows:

(Unit: Millions of yen)

	FY2021 (Jan. 1 through Dec. 31, 2021)	**FY2022 (Jan. 1 through Dec. 31, 2022)**
Expenses related to defined contribution plans	¥(2,342)	**¥(2,403)**

The abovementioned expenses are included in “cost of sales” and “selling, general and administrative expenses” on the consolidated statements of profit or loss.

Note 18: Share-based payments

(1) Stock options

i) Description of stock options

Until the fiscal year ended December 31, 2017, the Company granted the Group's directors, executive officers and other employees with stock options, which confer the right to purchase the Company's shares. Under the plan, 200 shares of common stock per one stock acquisition right are granted to the grantees. Stock options that are not exercised during the exercisable period will expire.

The general terms and conditions for stock options are as follows. The presentation is based on the numbers when the shares were granted.

Grant date	Number of shares granted	Vesting conditions	Exercisable period	Exercise price (Yen)
July 2, 2007 (Compensation-type)	53,200	(Note 1)	From July 3, 2007 to July 2, 2037 (Note 1)	¥ 1
July 1, 2008 (Compensation-type)	53,000	(Note 1)	From July 2, 2008 to July 1, 2038 (Note 1)	1
July 1, 2009 (Compensation-type)	129,400	(Note 1)	From July 2, 2009 to July 1, 2039 (Note 1)	1
July 1, 2010 (Compensation-type)	86,400	(Note 1)	From July 2, 2010 to July 1, 2040 (Note 1)	1
July 1, 2011 (Compensation-type)	86,000	(Note 1)	From July 2, 2011 to July 1, 2041 (Note 1)	1
July 2, 2012 (Compensation-type)	204,000	(Note 1)	From July 3, 2012 to July 2, 2042 (Note 1)	1
July 2, 2012 (Ordinary-type)	61,600	An option holder must remain in continued service from the grant date (July 2, 2012) to the vesting date (July 1, 2015).	From July 2, 2015 to July 1, 2021	2,810
March 26, 2013 (Compensation-type)	55,600	(Note 1)	From March 27, 2013 to March 26, 2043 (Note 1)	1
July 1, 2013 (Compensation-type)	118,400	(Note 1)	From July 2, 2013 to July 1, 2043 (Note 1)	1
July 1, 2013 (Ordinary-type)	66,200	An option holder must remain in continued service from the grant date (July 1, 2013) to the vesting date (June 30, 2016).	From July 1, 2016 to June 30, 2022	3,805
July 1, 2014 (Compensation-type)	128,800	(Note 1)	From July 2, 2014 to July 1, 2044 (Note 1)	1
July 1, 2014 (Ordinary-type)	66,000	An option holder must remain in continued service from the grant date (July 1, 2014) to the vesting date (June 30, 2017).	From July 1, 2017 to June 30, 2023	3,035
January 27, 2015 (Compensation-type)	4,800	(Note 1)	From January 28, 2015 to January 27, 2045 (Note 1)	1
July 1, 2015 (Compensation-type)	90,200	(Note 1)	From July 2, 2015 to July 1, 2045 (Note 1)	1
July 1, 2015 (Ordinary-type)	75,200	An option holder must remain in continued service from the grant date (July 1, 2015) to the vesting date (June 30, 2018).	From July 1, 2018 to June 30, 2024	4,000
February 22, 2016 (Compensation-type)	12,200	(Note 1)	From February 23, 2016 to February 22, 2046 (Note 1)	1
July 1, 2016 (Compensation-type)	139,200	(Note 1)	From July 2, 2016 to July 1, 2046 (Note 1)	1
July 1, 2016 (Ordinary-type)	76,000	An option holder must remain in continued service from the grant date (July 1, 2016) to the vesting date (June 30, 2019).	From July 1, 2019 to June 30, 2025	3,260
March 24, 2017 (Compensation-type)	24,200	(Note 1)	From March 25, 2017 to March 24, 2047 (Note 1)	1
July 3, 2017 (Compensation-type)	60,200	(Note 1)	From July 4, 2017 to July 3, 2047 (Note 1)	1

Notes: 1. Vesting conditions and exercisable period
Within the abovementioned exercisable periods, option holders may exercise their subscription rights within 10 years from the day after they lose their position as a director or an executive officer of the Company.
2. Effective from July 1, 2017, the Company consolidated its common shares at a ratio of five shares to one share. The number of shares granted and exercise price are calculated on the assumption that the consolidation of shares has been conducted on the grant date.

ii) Number and average exercise price of stock options

The number and weighted average exercise prices of stock options granted during the period are as follows. The number of stock options is shown after conversion into the number of shares.

	FY2021 (Jan. 1 through Dec. 31, 2021)		**FY2022 (Jan. 1 through Dec. 31, 2022)**	
	Number (Shares)	Weighted average exercise price (Yen)	Number (Shares)	Weighted average exercise price (Yen)
Outstanding as of January 1	1,121,600	¥ 800	**814,000**	**¥ 733**
Granted during the period	—	—	**—**	**—**
Forfeited during the period	1,600	3,630	**—**	**—**
Exercised during the period	300,200	929	**137,600**	**1,064**
Expired during the period	5,800	2,810	**14,000**	**3,805**
Outstanding as of December 31	814,000	¥ 733	**662,400**	**¥ 599**
Exercisable as of December 31	814,000	¥ 733	**662,400**	**¥ 599**

The weighted average remaining contractual period was 18.2 years and 18.1 years as of December 31, 2021 and 2022, respectively.

The weighted average share price on the exercise dates of stock options exercised in the fiscal years ended December 31, 2021 and 2022 were ¥4,807 and ¥4,875, respectively.

iii) Fair value of stock options

There were no stock options granted during the fiscal years ended December 31, 2021 and 2022.

iv) Equity-settled share-based payment transactions for which IFRS 2 is not applied

Out of the description in i) above, due to optional exemptions by IFRS 1, details of stock options for which IFRS 2 has not been applied are as follows:

Grant date	Number of shares granted	Vesting conditions	Exercisable period	Exercise price (Yen)
July 2, 2007 (Compensation-type)	53,200	(Note 1)	From July 3, 2007 to July 2, 2037(Note 1)	¥1
July 1, 2008 (Compensation-type)	53,000	(Note 1)	From July 2, 2008 to July 1, 2038(Note 1)	1
July 1, 2009 (Compensation-type)	129,400	(Note 1)	From July 2, 2009 to July 1, 2039(Note 1)	1
July 1, 2010 (Compensation-type)	86,400	(Note 1)	From July 2, 2010 to July 1, 2040(Note 1)	1
July 1, 2011 (Compensation-type)	86,000	(Note 1)	From July 2, 2011 to July 1, 2041(Note 1)	1

Notes: 1. Vesting conditions and exercisable period
Within the abovementioned exercisable periods, option holders may exercise their subscription rights within 10 years from the day after they lose their position as a director or an executive officer of the Company.
2. Effective from July 1, 2017, the Company consolidated its common shares at a ratio of five shares to one share. The number of shares granted is calculated on the assumption that the consolidation of shares has been conducted on the grant date.

v) Expenses recorded under stock options

There were no expenses recorded under the plan during the fiscal years ended December 31, 2021 and 2022 because all the stock options under the plan vested.

(2) Share-based compensation plan that uses a structure called BIP Trust

i) Description of share-based compensation plan that uses a structure called BIP Trust

The Company has introduced a plan to its directors and executive officers (excluding non-residents of Japan; hereinafter referred to as “directors, etc.”). The purpose is to further motivate the contributions to the increase of the Group’s corporate value in the medium to long term, and the achievement of performance targets as set out in the medium-term management plan.

In the plan, the BIP Trust acquires the Company’s shares, and delivers the shares and provides the amount of money equivalent to the value of the shares to directors, etc., based on their positions and the level of achievement of the performance targets and other factors.

ii) Expenses recorded under the share-based compensation plan that uses a structure called BIP Trust

Expenses recorded under the plan were ¥354 million and ¥287 million during the fiscal years ended December 31, 2021 and 2022, respectively.

These expenses were included in “cost of sales” and “selling, general and administrative expenses” on the consolidated statements of profit or loss.

iii) Weighted average fair value of the Company’s shares granted during the period

Weighted average fair value of the Company’s shares granted during the period is measured based on observable market prices, including expected dividends, etc.

Weighted average fair value of the Company’s shares granted was ¥3,341 and ¥4,296 during the fiscal years ended December 31, 2021 and 2022, respectively.

Note 19: Equity

(1) Share capital and share premium

	(Unit: Thousands of shares)	
	Fully paid issued shares (No par value ordinary shares)	
	FY2021 (Jan. 1 through Dec. 31, 2021)	**FY2022 (Jan. 1 through Dec. 31, 2022)**
As of January 1	227,441	**227,441**
Increase (Decrease)	—	**—**
As of December 31	227,441	**227,441**
Number of authorized shares	400,000	**400,000**

Out of the amount generated from the equity transaction, capital surplus consists of the amount which is not included in share capital.

Under the Companies Act of Japan, at least 50% of the proceeds of certain issues of common shares shall be credited to share capital.

(2) Retained earnings

Retained earnings include amounts transferred from accumulated gains or losses recognized in other components of equity upon the sale of financial assets measured at fair value through other comprehensive income.

Furthermore, retained earnings include the amount of accumulated foreign currency translation adjustments that had been recognized based on previous standards (JGAAP), and transferred to retained earnings as of the transition date to IFRS.

(3) Treasury shares

	(Unit: Thousands of shares)	
	Treasury shares	
	FY2021 (Jan. 1 through Dec. 31, 2021)	**FY2022 (Jan. 1 through Dec. 31, 2022)**
As of January 1	6,117	**5,839**
Decrease due to sales of less-than-one-unit shares	(0)	**(0)**
Increase due to purchases of less-than-one-unit shares	4	**4**
Decrease due to exercise of stock options	(300)	**(137)**
Increase due to market purchases of the BIP Trust	109	**66**
Decrease due to delivery to the beneficiaries of the BIP Trust	(92)	**(13)**
As of December 31	5,839	**5,757**

(4) Other components of equity

The following is a breakdown of other components of equity:

	(Unit: Millions of yen)	
	FY2021 (as of December 31, 2021)	**FY2022 (as of December 31, 2022)**
Remeasurements of defined benefit plans	¥ (6,927)	**¥ 9,405**
Net change in revaluation of financial assets measured at FVTOCI	43,896	**27,294**
Cash flow hedges	4,952	**2,321**
Exchange differences on translation of foreign operations	198,847	**300,024**
Total	¥240,769	**¥339,046**

Remeasurements of defined benefit plans

Remeasurements of defined benefit plans includes the effects of differences between the actuarial assumptions at the beginning of the period and the actual numbers at the end of the period, and differences between actual income from plan assets and projected interest income from plan assets.

Net change in revaluation of financial assets measured at FVTOCI

This includes the cumulative amount of the net change in revaluation of financial assets measured at FVTOCI.

Cash flow hedges

This is the effective portion of the cumulative amount of the net change in fair value of cash flow hedges relating to hedge transactions that have not yet been realized.

Exchange differences on translation of foreign operations
These are foreign currency differences arising from the translation of the financial statements of foreign operations.

(5) Dividends

Dividends paid during the fiscal years ended December 31, 2021 and 2022 are as follows:

(Fiscal year ended December 31, 2021)

Date of approval	Type of share	Total amount of dividends (Millions of yen)	Dividends per share (Yen)	Record date	Effective date
Shareholders' meeting held on March 30, 2021	Ordinary shares	¥13,297	¥60.00	December 31, 2020	March 31, 2021
Board of Directors meeting held on August 2, 2021	Ordinary shares	17,747	80.00	June 30, 2021	September 8, 2021

Notes 1: The year-end dividend based on the resolution of the Shareholders' meeting held on March 30, 2021, includes dividend payment of ¥18 million paid for the shares held by the BIP Trust.
2: The interim dividend based on the resolution of the Board of Directors meeting held on August 2, 2021, includes dividend payment of ¥25 million paid for the shares held by the BIP Trust.

(Fiscal year ended December 31, 2022)

Date of approval	Type of share	Total amount of dividends (Millions of yen)	Dividends per share (Yen)	Record date	Effective date
Shareholders' meeting held on March 30, 2022	Ordinary shares	**¥28,850**	**¥130.00**	December 31, 2021	March 31, 2022
Board of Directors meeting held on August 2, 2022	Ordinary shares	**23,312**	**105.00**	June 30, 2022	September 8, 2022

Notes 1: The year-end dividend based on the resolution of the Shareholders' meeting held on March 30, 2022, includes dividend payment of ¥41 million paid for the shares held by the BIP Trust.
2: The interim dividend based on the resolution of the Board of Directors meeting held on August 2, 2022, includes dividend payment of ¥39 million paid for the shares held by the BIP Trust.

Dividends for which the effective date falls in the period subsequent to the fiscal year are as follows:

(Fiscal year ended December 31, 2021)

Date of approval	Type of share	Total amount of dividends (Millions of yen)	Dividends per share (Yen)	Record date	Effective date
Shareholders' meeting held on March 30, 2022	Ordinary shares	¥28,850	¥130.00	December 31, 2021	March 31, 2022

Note: Total amount of dividends includes dividend payment of ¥41 million paid for the shares held by the BIP Trust.

(Fiscal year ended December 31, 2022)

Date of approval	Type of share	Total amount of dividends (Millions of yen)	Dividends per share (Yen)	Record date	Effective date
Shareholders' meeting held on March 30, 2023	Ordinary shares	**¥23,316**	**¥105.00**	December 31, 2022	March 31, 2023

Note: Total amount of dividends includes dividend payment of ¥39 million paid for the shares held by the BIP Trust.

Note 20: Other comprehensive income

Changes in other comprehensive income during the fiscal years ended December 31, 2021 and 2022 are as follows:

(Unit: Millions of yen)

	FY2021 (Jan. 1 through Dec. 31, 2021)			**FY2022 (Jan. 1 through Dec. 31, 2022)**		
	Before tax effects	Tax effects	Net amount	Before tax effects	Tax effects	Net amount
Remeasurements of defined benefit plans	¥ 33,918	¥ (9,521)	¥ 24,397	**¥ 21,339**	**¥(4,741)**	**¥ 16,598**
Net change in revaluation of financial assets measured at FVTOCI(Note)	11,785	(2,424)	9,360	**1,942**	**(1,021)**	**921**
Cash flow hedges	6,399	(1,655)	4,744	**(3,903)**	**997**	**(2,905)**
Exchange differences on translation of foreign operations	75,752	2,067	77,819	**122,460**	**292**	**122,753**
Share of other comprehensive income of associates and joint ventures accounted for using equity method	16	(0)	16	**8**	**—**	**8**
Total	¥127,872	¥(11,533)	¥116,338	**¥141,848**	**¥(4,472)**	**¥137,376**

Note: FVTOCI: Fair Value Through Other Comprehensive Income

During the fiscal year ended December 31, 2021, the reclassification adjustments of exchange differences on translation of foreign operations were ¥(7,512) million (before tax effects) and ¥2,024 million (tax effects). During the fiscal year ended December 31, 2022, the reclassification adjustments of exchange differences on translation of foreign operations were ¥(670) million (before tax effects) and ¥251 million (tax effects).

Amounts attributable to non-controlling interests are as follows:

(Unit: Millions of yen)

	FY2021 (Jan. 1 through Dec. 31, 2021)			**FY2022 (Jan. 1 through Dec. 31, 2022)**		
	Before tax effects	Tax effects	Net amount	Before tax effects	Tax effects	Net amount
Remeasurements of defined benefit plans	¥ 96	¥ 25	¥ 121	**¥ 260**	**¥(30)**	**¥ 230**
Net change in revaluation of financial assets measured at FVTOCI (Note)	10	(3)	6	**(3)**	**1**	**(2)**
Cash flow hedges	331	(100)	230	**226**	**(74)**	**152**
Exchange differences on translation of foreign operations	8,574	—	8,574	**17,300**	**94**	**17,394**
Total	¥9,011	¥ (77)	¥8,934	**¥17,784**	**¥(10)**	**¥17,774**

Note: FVTOCI: Fair Value Through Other Comprehensive Income

Note 21: Revenue

(1) Disaggregation of revenue

As disclosed in Note 4 “Segment information,” the Group has three reportable segments: Glass, Electronics, and Chemicals. In addition, sales are disaggregated by product groups and geographical segments. The reconciliations of the disaggregated revenue with the Group’s sales components are as follows.

i) Disaggregation by product groups

(Unit: Millions of yen)

		FY2021 (Jan. 1 through Dec. 31, 2021)	**FY2022 (Jan. 1 through Dec. 31, 2022)**
Glass	Architectural glass	¥ 381,080	**¥ 482,714**
	Automotive glass	351,149	**417,639**
	Subtotal	732,230	**900,354**
Electronics	Display	182,050	**155,369**
	Electronics materials	120,999	**149,548**
	Subtotal	303,049	**304,918**
Chemicals	Chlor-alkali & urethane	390,389	**489,810**
	Fluorochemical & specialty	123,926	**156,148**
	Life science	115,171	**147,200**
	Subtotal	629,487	**793,159**
Ceramics/Others		32,615	**37,442**
Total		¥1,697,383	**¥2,035,874**

ii) Disaggregation by geographical segments

FY2021 (Jan. 1 through Dec. 31, 2021)

(Unit: Millions of yen)

	Glass	Electronics	Chemicals	Ceramics/Others	Total
Japan/Asia	¥313,165	¥274,291	¥504,299	¥32,615	¥1,124,370
America	104,637	27,516	42,860	—	175,015
Europe	314,427	1,241	82,328	—	397,997
Total	¥732,230	¥303,049	¥629,487	¥32,615	¥1,697,383

Note: Sales by region are based on the location of each company, and “Brazil” is included in “America.”

FY2022 (Jan. 1 through Dec. 31, 2022)

(Unit: Millions of yen)

	Glass	Electronics	Chemicals	Ceramics/Others	Total
Japan/Asia	¥360,081	¥277,087	¥628,101	¥37,442	¥1,302,712
America	116,983	26,730	64,035	—	207,750
Europe	423,288	1,101	101,022	—	525,412
Total	¥900,354	¥304,918	¥793,159	¥37,442	¥2,035,874

Note: Sales by region are based on the location of each company, and "Brazil" is included in "America."

In the Glass segment, the Group sells architectural glass and automotive glass and delivers and installs related products, etc. Main customers are domestic and overseas housing, building and automotive companies.

In the Electronics segment, the Group delivers glass for display such as LCD glass, optoelectronic materials, semiconductor-related products, etc. Main customers are domestic and overseas panel manufactures and electronics companies.

In the Chemicals segment, the Group delivers chlor-alkali & urethane, fluorochemical & specialty chemicals, and life science products, etc. and sells products worldwide through trading companies and the Group's sales companies.

These are accounted for in accordance with the accounting policy described in Note 3 "Significant accounting policies." The consideration for performance obligations is mainly recovered within one year after performance obligations are satisfied. In addition, the consideration for performance obligations does not include a significant financing component.

(2) Contract balances

Information on contract assets and liabilities arising from contracts with customers is as follows:

(Unit: Millions of yen)

	FY2021 (as of December 31, 2021)	**FY2022 (as of December 31, 2022)**
Contract Assets	¥ 4,556	**¥ 5,829**
Contract Liabilities	52,587	**53,413**

Contract assets primarily relate to the Group's rights to receive consideration for performance obligations that have been completed, but not yet billed for, as of the reporting date. Contract assets are reclassified as receivables when the Group's right to payment becomes unconditional.

Contract liabilities mainly relate to consideration received from customers before the Group delivers products to them, based on receivables management and other considerations. The revenue recognized during the fiscal years ended December 31, 2021 and 2022, included balances of contract liabilities at the beginning of the fiscal years of ¥24,156 million and ¥48,611 million, respectively.

(3) Transaction price allocated to the remaining performance obligations

The Group applies the practical expedients for exemption on disclosure of information on remaining performance obligations that have original expected duration of one year or less. The Group has no significant transactions with original expected duration exceeding one year. In addition, there are no significant amounts in consideration from contracts with customers that are not included in transaction prices.

(4) Assets recognized from the costs of obtaining or fulfilling contracts with customers

There are no assets recognized from the costs of obtaining or fulfilling contracts with customers as of the fiscal year ended December 31, 2022. In addition, if the amortization period of the assets that the Group otherwise would have recognized is one year or less, the Group applies the practical expedient of recognizing the incremental costs of obtaining the contract as an expense when incurred.

Note 22: Classification of expenses by nature

The classification of expenses by nature and reconciliation with business profit are as follows:

(Unit: Millions of yen)

	FY2021 (Jan. 1 through Dec. 31, 2021)	**FY2022 (Jan. 1 through Dec. 31, 2022)**
Net sales	¥1,697,383	**¥ 2,035,874**
Personnel expenses	(335,558)	**(375,381)**
Depreciation and amortization	(166,756)	**(185,656)**
Others	(988,900)	**(1,290,894)**
Operating profit	206,168	**183,942**
Foreign exchange gain	10,955	**—**
Gains on sale of fixed assets	2,361	**14,786**
Gains on sale of shares of subsidiaries and associates	1,431	**8,556**
Gains on transfer of business	28,010	**—**
Gains on reclassification of foreign currency translation adjustments for foreign operations due to liquidation decision	7,504	**—**
Others	6,410	**3,813**
Other income	56,672	**27,156**
Foreign exchange loss	—	**(4,025)**
Losses on disposal of fixed assets	(6,685)	**(8,635)**
Impairment losses	(34,450)	**(128,447)**
Expenses for restructuring programs	(5,159)	**(9,641)**
Others	(6,296)	**(3,142)**
Other expenses	(52,592)	**(153,892)**
Business profit	¥ 210,247	**¥ 57,206**

The amounts of research and development expenses were ¥49,444 million and ¥52,252 million during the fiscal years ended December 31, 2021 and 2022, respectively.

Gains on sale of fixed assets during the fiscal year ended December 31, 2022 includes a gain of ¥14,263 million from the sale of land the Company owned in Amagasaki City, Hyogo Prefecture.

The events, circumstances and other factors that led to the recognition of impairment losses are presented in Note 11 “Impairment of non-financial assets.”

Note 23: Finance income and finance costs

(1) Finance income

(Unit: Millions of yen)

	FY2021 (Jan. 1 through Dec. 31, 2021)	**FY2022 (Jan. 1 through Dec. 31, 2022)**
Interest income	¥2,536	**¥ 5,356**
Dividend income	3,290	**2,711**
Others	706	**2,536**
Total	¥6,533	**¥10,603**

(2) Finance costs

(Unit: Millions of yen)

	FY2021 (Jan. 1 through Dec. 31, 2021)	**FY2022 (Jan. 1 through Dec. 31, 2022)**
Interest expense	¥(6,424)	**¥(9,040)**
Others	(310)	**(256)**
Total	¥(6,735)	**¥(9,297)**

Interest income and interest expense are generated primarily from financial assets and financial liabilities measured at amortized cost.

Dividend income is generated mainly from financial assets measured at fair value through other comprehensive income.

Note 24: Income tax expenses

(1) Composition of income tax expenses

(Unit: Millions of yen)

	FY2021 (Jan. 1 through Dec. 31, 2021)	**FY2022 (Jan. 1 through Dec. 31, 2022)**
Current income tax expenses	¥(57,725)	**¥(55,110)**
Deferred income tax expenses	6,742	**19,103**
Total	¥(50,982)	**¥(36,007)**

Deferred income tax expenses include the amounts of the benefits from previously unrecognized tax losses, tax credits, or temporary differences of prior periods that were used to reduce deferred income tax expenses. During the fiscal years ended December 31, 2021 and 2022, the amounts of decrease in deferred income tax expenses due to these benefits were ¥3,413 million and ¥1,989 million, respectively.

There were no material fluctuations in deferred income tax expenses due to changes in tax rates during the fiscal years ended December 31, 2021 and 2022.

(2) Income tax recognized in other comprehensive income

Income tax recognized in other comprehensive income is presented in Note 20 “Other comprehensive income.”

(3) Reconciliation between effective statutory tax rate and effective income tax rate

Income tax expenses applicable to the Company and its domestic consolidated subsidiaries consist of corporate income tax (national), enterprise tax (local) and resident income tax (local). The effective statutory tax rates calculated by using these taxes for the fiscal years ended December 31, 2021 and 2022 are 30.4% and 30.4%, respectively.

Foreign subsidiaries are subject to corporate income tax and other taxes in their respective jurisdiction.

The following is a reconciliation between the effective statutory tax rates and the effective income tax rates for corporate income tax expenses appearing on the consolidated statements of profit or loss.

	FY2021 (Jan. 1 through Dec. 31, 2021)	**FY2022 (Jan. 1 through Dec. 31, 2022)**
Effective statutory tax rate of the Company	30.4%	**30.4%**
Entertainment expenses, etc., nondeductible	0.4	**2.2**
Dividend income, not taxable	(0.9)	**(4.8)**
Difference in tax rates applied to foreign subsidiaries	(6.1)	**(4.3)**
Changes in unrecognized temporary differences	(1.0)	**23.6**
Impairment of goodwill	1.4	**15.2**
Others	0.1	**(0.6)**
Effective income tax rate after tax effect accounting applied	24.3%	**61.5%**

Note 25: Earnings per share

(1) Basic earnings per share

Basic earnings per share and the basis for calculating basic earnings per share are as follows:

	FY2021 (Jan. 1 through Dec. 31, 2021)	**FY2022 (Jan. 1 through Dec. 31, 2022)**
Profit (loss) for the year attributable to owners of the parent (Millions of yen)	¥123,840	**¥ (3,152)**
Weighted average number of ordinary shares outstanding (Thousands of shares)	221,496	**221,647**
Basic earnings (loss) per share (Yen)	¥ 559.11	**¥ (14.22)**

(2) Diluted earnings per share

Diluted earnings per share and the basis for calculating diluted earnings per share are as follows:

	FY2021 (Jan. 1 through Dec. 31, 2021)	**FY2022 (Jan. 1 through Dec. 31, 2022)**
Profit (loss) for the year attributable to owners of the parent (Millions of yen)	¥123,840	**¥ (3,152)**
Adjustments to profit or loss used to calculate diluted earnings per share (Millions of yen)	—	**—**
Profit (loss) used to calculate diluted earnings per share (Millions of yen)	¥123,840	**¥ (3,152)**
Weighted average number of ordinary shares outstanding (Thousands of shares)	221,496	**221,647**
Effects of dilutive potential ordinary shares		
Stock options based on subscription rights (Thousands of shares)	798	**—**
Diluted weighted average number of ordinary shares outstanding (Thousands of shares)	222,295	**221,647**
Diluted earnings (loss) per share (Yen)	¥ 557.10	**¥ (14.22)**

In the fiscal year ended December 31, 2022, the exercise of stock options using the stock acquisition rights method reduced net loss per share, and as a result, potential ordinary shares have no dilution effect.

Note 26: Financial instruments

(1) Capital management

The Group has adopted return on equity attributable to owners of the parent (ROE) and the debt-to-equity ratio (ratio of interest-bearing debt to equity) as its financial targets. The Group aims to attain those financial targets by improving not only profits but also the asset turnover ratio.

(2) Credit risk

Credit risk is the risk of financial losses to the Group if a counterparty to a financial instrument fails to meet its contractual obligations.

Trade and other receivables including notes receivables, accounts receivables, and other financial assets are exposed to customer credit risks. To manage these risks, each Group company performs due date controls and balance controls for each customer, and identifies and mitigates risks regarding the collection of receivables caused by factors such as deterioration of financial conditions at an early stage, in accordance with each Group entity's credit management rules.

In its derivative transactions, the Group uses only creditworthy financial institutions to reduce its credit risks.

The total carrying amount of financial assets represents the maximum amount of exposure to credit risk.

i) Credit risk exposure

An analysis of the aging of trade receivables, other receivables and other financial assets is as follows:

FY2021 (as of Dec. 31, 2021)

(Unit: Millions of yen)

	FY2021 (as of Dec. 31, 2021)			
		Financial assets of which lifetime expected credit losses are measured as allowance for doubtful accounts		
	Financial assets of which 12-month expected credit losses are measured as allowance for doubtful accounts	Financial assets whose credit risk increased significantly since initial recognition	Financial assets of which expected credit losses are always measured at their expected lifetime as allowance for doubtful accounts	Total
Not past due	¥34,671	¥ —	¥276,132	¥310,804
Past due not later than 30 days	140	—	12,793	12,933
Past due over 30 days but within 90 days	—	52	5,183	5,236
Past due over 90 days	—	5,555	7,245	12,801
Total	¥34,812	¥5,608	¥301,355	¥341,775

FY2022 (as of Dec. 31, 2022)

(Unit: Millions of yen)

	FY2022 (as of Dec. 31, 2022)			
		Financial assets of which lifetime expected credit losses are measured as allowance for doubtful accounts		
	Financial assets of which 12-month expected credit losses are measured as allowance for doubtful accounts	Financial assets whose credit risk increased significantly since initial recognition	Financial assets of which expected credit losses are always measured at their expected lifetime as allowance for doubtful accounts	Total
Not past due	**¥37,953**	**¥ —**	**¥297,803**	**¥335,756**
Past due not later than 30 days	**57**	**—**	**15,021**	**15,079**
Past due over 30 days but within 90 days	**—**	**37**	**8,535**	**8,572**
Past due over 90 days	**—**	**945**	**4,500**	**5,445**
Total	**¥38,010**	**¥983**	**¥325,859**	**¥364,854**

ii) Allowance for doubtful accounts

Changes in the allowance account for credit losses on trade receivables, other receivables and other financial assets are as follows:

There was no significant increase or decrease in gross carrying amount of the financial instruments which contributed to changes in the allowance account for credit losses during the fiscal year ended December 31, 2022.

FY2021 (Jan. 1 through Dec. 31, 2021)

(Unit: Millions of yen)

	FY2021 (Jan. 1 through Dec. 31, 2021)			
		Lifetime expected credit losses		
	12-month expected credit losses	Financial assets whose credit risk increased significantly since initial recognition	Financial assets of which expected credit losses are always measured at their expected lifetime as allowance for doubtful accounts	Total
As of January 1	¥ 272	¥3,595	¥3,948	¥7,815
Write-off	(0)	—	(957)	(957)
Remeasurements	(184)	(138)	1,141	821
Others	—	—	—	—
As of December 31	¥ 88	¥3,457	¥4,132	¥7,679

FY2022 (Jan. 1 through Dec. 31, 2022)

(Unit: Millions of yen)

	FY2022 (Jan. 1 through Dec. 31, 2022)			
		Lifetime expected credit losses		
	12-month expected credit losses	Financial assets whose credit risk increased significantly since initial recognition	Financial assets of which expected credit losses are always measured at their expected lifetime as allowance for doubtful accounts	Total
As of January 1	**¥88**	**¥ 3,457**	**¥4,132**	**¥ 7,679**
Write-off	**—**	**(2,267)**	**(317)**	**(2,584)**
Remeasurements	**8**	**(1,093)**	**18**	**(1,066)**
Others	**—**	**—**	**(2)**	**(2)**
As of December 31	**¥96**	**¥ 96**	**¥3,831**	**¥ 4,025**

(3) Liquidity risk

Liquidity risk is the risk that the Group will encounter difficulty in discharging its financial liabilities using cash or other financial assets.

Financial liabilities such as loans and corporate bonds are exposed to liquidity risks. The Group manages these risks by diversifying fund procurement methods, establishing commitment lines with various financial institutions, and keeping an appropriate balance between direct and indirect fund procurements and a proper mixture of short-term and long-term loans and bonds.

An analysis of the contractual maturities of financial liabilities is as follows:

(Unit: Millions of yen)

	FY2021 (as of December 31, 2021)							
	Carrying amount	Contractual cash flows	Due within one year or less	Due between one year and two years	Due between two years and three years	Due between three years and four years	Due between four years and five years	Due after five years
Non-derivative financial liabilities								
Loans payable	¥470,662	¥480,308	¥116,498	¥ 70,799	¥77,840	¥54,196	¥50,062	¥110,910
Commercial paper	—	—	—	—	—	—	—	—
Corporate bonds	59,910	60,813	309	20,208	108	20,100	62	20,025
Finance lease liabilities	72,620	91,317	13,873	11,598	10,389	9,192	5,617	40,645
Total interest-bearing debt	603,194	632,439	130,681	102,606	88,337	83,489	55,741	171,582
Others(Note)	339,677	339,932	337,874	2,058	—	—	—	—
Total	¥942,871	¥972,371	¥468,555	¥104,664	¥88,337	¥83,489	¥55,741	¥171,582

Note: Others consist of "trade payables," "other payables," "other current liabilities," and "other non-current liabilities."

	Carrying amount	Contractual cash flows	Due within one year	Due after one year
Derivative financial liabilities				
Foreign exchange contracts	¥2,469	¥2,469	¥2,469	¥ —
Interest rate contracts	492	491	394	97
Commodity contracts	23	23	23	—
Total	¥2,986	¥2,985	¥2,888	¥97

The Group does not expect the cash flows included in the maturity analysis to occur much earlier than anticipated or to differ significantly from the anticipated monetary amounts.

(Unit: Millions of yen)

	FY2022 (as of December 31, 2022)							
	Carrying amount	Contractual cash flows	Due within one year or less	Due between one year and two years	Due between two years and three years	Due between three years and four years	Due between four years and five years	Due after five years
Non-derivative financial liabilities								
Loans payable	**¥508,200**	**¥ 528,912**	**¥165,256**	**¥ 95,044**	**¥64,925**	**¥64,992**	**¥47,708**	**¥ 90,984**
Commercial paper	**1,853**	**1,940**	**1,940**	**—**	**—**	**—**	**—**	**—**
Corporate bonds	**59,935**	**60,504**	**20,208**	**108**	**20,100**	**62**	**20,025**	**—**
Finance lease liabilities	**80,253**	**97,500**	**14,785**	**13,134**	**11,216**	**6,905**	**5,984**	**45,473**
Total interest-bearing debt	**650,242**	**688,858**	**202,191**	**108,287**	**96,242**	**71,960**	**73,719**	**136,458**
Others(Note)	**348,612**	**348,612**	**346,133**	**2,479**	**—**	**—**	**—**	**—**
Total	**¥998,855**	**¥1,037,470**	**¥548,324**	**¥110,766**	**¥96,242**	**¥71,960**	**¥73,719**	**¥136,458**

Note: Others consist of "trade payables," "other payables," and "other non-current liabilities."

	Carrying amount	Contractual cash flows	Due within one year	Due after one year
Derivative financial liabilities				
Foreign exchange contracts	**¥3,337**	**¥3,337**	**¥3,337**	**¥ —**
Interest rate contracts	**1,147**	**1,122**	**269**	**853**
Commodity contracts	**2,012**	**2,012**	**2,012**	**—**
Total	**¥6,496**	**¥6,471**	**¥5,618**	**¥853**

The Group does not expect the cash flows included in the maturity analysis to occur much earlier than anticipated or to differ significantly from the anticipated monetary amounts.

(4) Currency risk

The Group operates businesses globally, and is therefore exposed to currency fluctuation risks associated with transactions undertaken in currencies other than the functional currency of the individual Group companies. To manage such risks, the Group hedges the risks with foreign exchange forward contracts, currency swap contracts, and other instruments.

The principal exchange rates are as follows:

(Unit: Yen)

	FY2021 (Jan. 1 through Dec. 31, 2021)		**FY2022 (Jan. 1 through Dec. 31, 2022)**	
	Average rate	Rate at the end of the reporting period	Average rate	Rate at the end of the reporting period
U.S. dollars	¥109.80	¥115.02	**¥131.43**	**¥132.70**
Euros	129.89	130.51	**138.04**	**141.47**

i) Currency risk exposure

The Group's maximum amount of exposure to currency fluctuation risk is as follows.

The exposure excludes amounts for which currency fluctuation risk is hedged using foreign exchange forward contracts, currency swap contracts, and other instruments.

	FY2021 (as of December 31, 2021)		**FY2022 (as of December 31, 2022)**	
	Thousands of U.S. dollars	Thousands of euros	Thousands of U.S. dollars	Thousands of euros
Financial instruments dominated in foreign currency	$(257,618)	€7,203	**$(207,385)**	**€135**

ii) Sensitivity analysis of currency fluctuation risk

In the event of a 1% appreciation against the U.S. dollar and euro at the end of the reporting period, the monetary impact of this exchange rate movement on profit before tax is shown below.

This analysis is performed by multiplying the currency fluctuation risk exposures by 1%, assuming that movements in various exchange rates have no impact on other variables (other exchange rates, interest rates, etc.). It was conducted on the same basis as the analysis for the fiscal years ended December 31, 2021 and 2022.

(Unit: Millions of yen)

	FY2021 (Jan. 1 through Dec. 31, 2021)	**FY2022 (Jan. 1 through Dec. 31, 2022)**
U.S. dollars (1% yen appreciation)	¥296	**¥275**
Euros (1% yen appreciation)	(9)	**(0)**

(5) Interest rate risk

Interest-bearing debts with floating rates are exposed to interest rate fluctuation risks. For some long-term floating-rate loans, the Group uses derivative transactions (interest rate swaps) as hedging instruments to avoid the interest rate fluctuation risks and convert the floating rates into fixed rates.

i) Exposure to interest rate risk

The Group's exposure to interest rate fluctuation risk is as follows.

The monetary amount of exposure excludes monetary amounts for which currency fluctuation risk is hedged using interest rate swap contracts.

(Unit: Millions of yen)

	FY2021 (as of December 31, 2021)			**FY2022 (as of December 31, 2022)**		
	Due within one year	Due after one year	Total	Due within one year	Due after one year	Total
Loans payable	¥36,820	¥ —	¥ 36,820	**¥67,897**	**¥ —**	**¥ 67,897**
Commercial paper	—	—	—	**1,853**	**—**	**1,853**
Current interest-bearing debt	¥36,820	¥ —	¥ 36,820	**¥69,750**	**¥ —**	**¥ 69,750**
Loans payable	¥68,776	¥38,631	¥107,408	**¥77,899**	**¥68,352**	**¥146,252**
Non-current interest-bearing debt	¥68,776	¥38,631	¥107,408	**¥77,899**	**¥68,352**	**¥146,252**

ii) Sensitivity analysis of interest rate risk

In the event of a 1% interest rate increase, the monetary impact of financial instruments affected by the interest rate movement on profit before tax is shown below.

This analysis is performed by multiplying the currency fluctuation risk exposures by 1%, assuming that movements in various exchange rates have no impact on other variables (other exchange rates, etc.). It was conducted on the same basis as the analysis for the fiscal years ended December 31, 2021 and 2022.

(Unit: Millions of yen)

	FY2021 (Jan. 1 through Dec. 31, 2021)	**FY2022 (Jan. 1 through Dec. 31, 2022)**
Floating interest rate financial instruments	¥(1,442)	**¥(2,160)**

(6) Fair value

The fair value of financial instruments is categorized into three levels based on inputs used to measure fair value, as follows:

Inputs include stock prices, exchange rates, and interest rates as well as indexes related to commodity prices, etc.

Level 1: Quoted prices in active markets

Level 2: Observable prices other than quoted prices included within Level 1

Level 3: Inputs not based on observable market data

i) Financial assets and liabilities measured at fair value

The fair value of financial assets and financial liabilities is determined as follows.

(Derivatives)

Foreign exchange contracts are mainly based on forward exchange rates and prices quoted by financial institutions with which contracts are concluded. Interest rate contracts are mainly based on prices quoted by financial institutions with which contracts are concluded.

Commodity contracts are mainly based on prices quoted by counterparties with whom contracts are concluded. In each case, the financial instruments are classified as Level 2 in the fair value hierarchy.

(Financial assets measured at fair value through other comprehensive income)

The Group measures financial assets at fair value when market values are available, and classifies such assets as Level 1 in the fair value hierarchy. The Group estimates fair values of financial instruments whose market values are unavailable using either the discounted future cash flows method, third-party appraisal, or another appropriate measurement technique. Such financial instruments are classified as Level 3 in the fair value hierarchy.

(Financial assets measured at fair value through profit or loss)

The Group measures financial assets at fair value when market values are available, and classifies such assets as Level 1 in the fair value hierarchy. The Group estimates fair values of financial instruments whose market values are unavailable using either the discounted future cash flows method, third-party appraisal, or another appropriate measurement technique. Such financial instruments are classified as Level 3 in the fair value hierarchy.

ii) Financial assets and liabilities measured at amortized cost

The fair value of financial assets and financial liabilities measured at amortized cost is determined as follows.

(Financial assets measured at amortized cost)

Each receivable is categorized by period, and its fair value is the present value of future cash flows discounted by an interest rate that reflects time to maturity and credit risk.

(Loans payable)

As short-term loans payable are settled on a short-term basis, their fair values approximate their carrying amounts.

The fair values of long-term loans payable are calculated by the total sum of the principal and interest discounted by the interest rates that would apply if similar borrowings were conducted anew. For long-term loans payable at floating interest rates, however, the fair values approximate the carrying amounts because the interest rates are adjusted regularly at fixed intervals.

(Corporate bonds)

Fair values of corporate bonds are calculated based on market prices.

(Financial liabilities measured at amortized cost other than the above)

Each payable is categorized by period, and its fair value is the present value of future cash flows discounted by an interest rate that reflects time to maturity and credit risk.

Financial assets and financial liabilities measured at amortized cost are classified as Level 2 in the fair value hierarchy.

iii) Fair value of financial assets and liabilities

The carrying amounts and fair values of financial instruments as of December 31, 2021 and 2022 are as follows:

(Unit: Millions of yen)

	FY2021 (as of December 31, 2021)		**FY2022 (as of December 31, 2022)**	
	Carrying amount	Fair value	Carrying amount	Fair value
Financial assets measured at fair value				
Other current assets and other financial assets				
Derivatives not designated as hedges	¥ 6,439	¥ 6,439	**¥ 15,749**	**¥ 15,749**
Derivatives designated as hedges	7,048	7,048	**3,185**	**3,185**
Other financial assets				
Financial assets measured at FVTOCI(Note)	102,452	102,452	**67,677**	**67,677**
Financial assets measured at FVTPL(Note)	4,000	4,000	**4,000**	**4,000**
Financial assets measured at amortized cost				
Cash and cash equivalents	195,830	195,830	**209,716**	**209,716**
Trade receivables	295,161	295,161	**315,808**	**315,808**
Other receivables	32,093	32,093	**22,320**	**22,320**
Other financial assets	6,841	6,841	**16,870**	**16,870**
Financial liabilities measured at fair value				
Other current liabilities and other non-current liabilities				
Derivatives not designated as hedges	2,951	2,951	**6,454**	**6,454**
Derivatives designated as hedges	34	34	**41**	**41**
Financial liabilities measured at amortized cost				
Trade payables	196,435	196,435	**214,332**	**214,332**
Interest-bearing debt (short-term and long-term)				
Loans payable	470,662	474,210	**508,200**	**508,750**
Commercial paper	—	—	**1,853**	**1,853**
Corporate bonds	59,910	60,472	**59,935**	**59,848**
Other payables	122,047	122,047	**131,800**	**131,800**
Other current liabilities	19,134	19,134	**—**	**—**
Other non-current liabilities	2,058	2,058	**2,479**	**2,479**

Note: FVTOCI: Fair Value Through Other Comprehensive Income
FVTPL: Fair Value Through Profit or Loss

iv) Fair value hierarchy

The following table is an analysis of financial instruments measured at fair value by valuation methods.

(Unit: Millions of yen)

	FY2021 (as of December 31, 2021)			
	Level 1	Level 2	Level 3	Total
Derivative financial assets	¥ —	¥13,488	¥ —	¥ 13,488
Derivatives not designated as hedges	—	6,439	—	6,439
Derivatives designated as hedges	—	7,048	—	7,048
Equity instruments	93,690	—	8,761	102,452
Financial assets measured at FVTOCI(Note)	93,690	—	8,761	102,452
Debt instruments	—	—	4,000	4,000
Financial assets measured at FVTPL(Note)	—	—	4,000	4,000
Derivative financial liabilities	—	2,986	—	2,986
Derivatives not designated as hedges	—	2,951	—	2,951
Derivatives designated as hedges	—	34	—	34

Note: FVTOCI: Fair Value Through Other Comprehensive Income
FVTPL: Fair Value Through Profit or Loss

	(Unit: Millions of yen)			
	FY2022 (as of December 31, 2022)			
	Level 1	Level 2	Level 3	Total
Derivative financial assets	**¥ —**	**¥18,935**	**¥ —**	**¥18,935**
Derivatives not designated as hedges	**—**	**15,749**	**—**	**15,749**
Derivatives designated as hedges	**—**	**3,185**	**—**	**3,185**
Equity instruments	**56,857**	**—**	**10,819**	**67,677**
Financial assets measured at FVTOCI(Note)	**56,857**	**—**	**10,819**	**67,677**
Debt instruments	**—**	**—**	**4,000**	**4,000**
Financial assets measured at FVTPL(Note)	**—**	**—**	**4,000**	**4,000**
Derivative financial liabilities	**—**	**6,496**	**—**	**6,496**
Derivatives not designated as hedges	**—**	**6,454**	**—**	**6,454**
Derivatives designated as hedges	**—**	**41**	**—**	**41**

Note: FVTOCI: Fair Value Through Other Comprehensive Income
FVTPL: Fair Value Through Profit or Loss

The presence of any financial instruments subject to significant transfers between fair value hierarchy levels is determined at the end of every period. There were no financial instruments subject to significant transfers between the fair value hierarchy levels during the fiscal years ended December 31, 2021 and 2022.

There were no significant changes in “Financial assets measured at fair value through other comprehensive income” classified as Level 3 during the fiscal year ended December 31, 2022.

Derivative financial assets are included in “Other current assets” and “Other financial assets” in the consolidated statements of financial position.

Equity instruments and debt instruments are included in “Other financial assets” in the consolidated statements of financial position.

Derivative financial liabilities are included in “Other current liabilities” and “Other non-current liabilities” in the consolidated statements of financial position.

Changes in financial instruments categorized within Level 3 of the fair value hierarchy during the fiscal year are as follows:

	(Unit: Millions of yen)	
	FY2021 (Jan. 1 through Dec. 31, 2021)	**FY2022 (Jan. 1 through Dec. 31, 2022)**
Balance as of January 1	¥10,825	**¥12,761**
Purchases	4,260	**1,316**
Sales	(1,655)	**(1,014)**
Other comprehensive income	(677)	**1,871**
Other changes	8	**(116)**
Balance as of December 31	¥12,761	**¥14,819**

v) Equity instruments

Equity instruments such as equity securities are held mainly for the purpose of maintaining and strengthening business relationships over the medium and long terms, and are designated as financial assets measured at FVTOCI. The following is a breakdown of the major stocks within equity instruments and their fair values:

	(Unit: Millions of yen)	
	FY2021 (as of December 31, 2021)	**FY2022 (as of December 31, 2022)**
Suzuki Motor Corporation	¥ 13,154	**¥12,684**
Mitsubishi Estate Co., Ltd.	18,105	**10,784**
Honda Motor Co., Ltd.	10,982	**10,308**
Mitsubishi Gas Chemical Company, Inc.	7,850	**6,611**
Mitsubishi Logistics Corporation	4,782	**3,767**
Toyota Motor Corporation	19,497	**—**
Others	28,080	**23,519**
Total	¥102,452	**¥67,677**

Equity instruments are sold taking into consideration the fair value such as market value of shares and the need to hold shares for business purposes. The fair values of and cumulative gains or losses (Before tax effects) recognized in other components of equity on stocks sold during the fiscal years ended December 31, 2021 and 2022 are shown below. The cumulative gains or losses recognized are transferred on sale from other components of equity to retained earnings.

(Unit: Millions of yen)

FY2021 (Jan. 1 through Dec. 31, 2021)		**FY2022 (Jan. 1 through Dec. 31, 2022)**	
Fair value	Cumulative gains or losses (Before tax effects)	Fair value	Cumulative gains or losses (Before tax effects)
¥32,153	¥23,813	**¥36,431**	**¥24,433**

The following is a breakdown of dividend income recognized from equity instruments:

(Unit: Millions of yen)

FY2021 (Jan. 1 through Dec. 31, 2021)		**FY2022 (Jan. 1 through Dec. 31, 2022)**	
Financial assets derecognized during the year	Financial assets held as of the end of the reporting year	Financial assets derecognized during the year	Financial assets held as of the end of the reporting year
¥432	¥2,858	**¥476**	**¥2,234**

(7) Derivatives and hedge accounting

The Group uses commodity futures and foreign exchange forward contracts to hedge variations in cash flows associated with forecast transactions and interest rate swaps and instruments to hedge variations in cash flows associated with loans payable with floating interest rates. The Group uses these derivatives only for transactions justified by actual demand, and does not hold these derivatives for speculative or trading purposes.

When applying hedge accounting, at the inception of hedges, the Group formally designates and documents hedging relationships to which hedge accounting is applied and the objectives and strategies of risk management for undertaking hedges. Moreover, at the inception of hedges, the Group evaluates whether or not the hedging instrument can be predicted to be effective. Thereafter, the Group continuously evaluates whether the derivative is highly effective in offsetting changes in future cash flows from the hedged item.

For the purpose of hedging variations in cash flows associated with raw material and fuel costs, the Group enters into raw material and fuel swap contracts for natural gas, oil and other commodities to hedge the risk of price fluctuations. The Group has determined that there is an economic relationship between the raw materials and fuel it uses, which reflects market prices, and the hedging instruments that are correlated with market prices for raw materials and fuel. The risk of price fluctuations has an impact on the Group's consolidated financial statements through fluctuations in raw material and fuel costs. Therefore, the Group applies hedge accounting by designating only raw material and fuel costs as risk factors. The designated risk factor accounts for most of the risk of price fluctuations. Moreover, at the inception of hedging relationships, the Group sets an appropriate hedge ratio based on the quantity of the hedged item and the quantity of hedging instruments. In principle, the Group sets the hedge ratio so as to obtain a one-to-one relationship between those quantities.

The ineffective portion of hedging instruments arises mainly because changes in the fair value of the hedging instruments are unable to fully cover the fluctuations in the hedged item, namely the fluctuations in raw material and fuel costs.

For the purpose of hedging variations in cash flows associated with foreign currency-denominated forecast transactions, the Group enters into forward exchange contracts to hedge the risk of exchange rate fluctuations. In applying hedge accounting to the above-mentioned risk, the Group confirms that an economic relationship exists between the hedged item and the hedging instrument through a qualitative evaluation of whether the critical terms of the hedged item and the hedging instrument are the same or closely match. This is in order to confirm that the economic relationship is such that the risk of exchange rate fluctuations, which is the hedged item, is offset by changes in the fair value of the hedging instrument.

Details on cash flow hedges for commodity price risk and exchange rate fluctuations risk are as follows:

i) Impact of hedge accounting on the consolidated statements of financial position

As of December 31, 2021 and 2022, the carrying amount of hedging instruments on the consolidated statements of financial position and the changes in the fair value of hedging instruments used as a basis for calculating hedge ineffectiveness are as follows:

(Unit: Millions of yen)

		FY2021 (as of December 31, 2021)		
Type of risk	Hedging instrument	Carrying amount of hedging instrument		Changes in fair value of hedging instrument
Commodity price risk(Note)	Swap contract	Other current assets	¥5,164	¥13,456
		Other financial assets	1,884	
		Other current liabilities	—	
		Other non-current liabilities	—	
Exchange rate fluctuations risk	Forward exchange contract	Other current assets	¥ —	¥ (10)
		Other financial assets	—	
		Other current liabilities	34	
		Other non-current liabilities	—	

Note: The delivery month of foregoing contracts are expected to mature within three years from December 31, 2021 and most parts of contracts are expected to mature within one year from December 31, 2021.

(Unit: Millions of yen)

		FY2022 (as of December 31, 2022)		
Type of risk	Hedging instrument	Carrying amount of hedging instrument		Changes in fair value of hedging instrument
Commodity price risk(Note)	Swap contract	Other current assets	**¥3,122**	**¥9,060**
		Other financial assets	**—**	
		Other current liabilities	**20**	
		Other non-current liabilities	**15**	
Exchange rate fluctuations risk	Forward exchange contract	Other current assets	**¥ 62**	**¥ 2**
		Other financial assets	**—**	
		Other current liabilities	**5**	
		Other non-current liabilities	**—**	

Note: The delivery month of foregoing contracts are expected to mature within three years from December 31, 2022 and most parts of contracts are expected to mature within one year from December 31, 2022.

The notional amount of hedging instruments as of December 31, 2021 and 2022 are as follows:

(Unit: Millions of yen)

		FY2021 (as of December 31, 2021)	**FY2022 (as of December 31, 2022)**
Type of risk	Hedging instrument	Notional amount	Notional amount
Commodity price risk	Swap contract	¥3,262	**¥9,843**
Exchange rate fluctuations risk	Forward exchange contract	¥8,416	**¥3,865**

The changes in value of the hedged items used as the basis for calculating hedge ineffectiveness and the balances remaining in the cash flow hedge reserve as of December 31, 2021 and 2022 are as follows:

(Unit: Millions of yen)

	FY2021 (as of December 31, 2021)	
Type of risk	Changes in value of hedged item	Cash flow hedge reserve
Commodity price risk	¥(13,456)	¥7,048
Exchange rate fluctuations risk	¥ 10	¥ (34)

(Unit: Millions of yen)

	FY2022 (as of December 31, 2022)	
Type of risk	Changes in value of hedged item	Cash flow hedge reserve
Commodity price risk	**¥(9,060)**	**¥3,086**
Exchange rate fluctuations risk	**¥ (2)**	**¥ 57**

ii) Impact of hedge accounting on the consolidated statements of profit or loss and consolidated statements of comprehensive income

Profit or loss items recorded on the consolidated statements of profit or loss and consolidated statements of comprehensive income during the fiscal years ended December 31, 2021 and 2022 are as follows:

(Unit: Millions of yen)

	FY2021 (Jan. 1 through Dec. 31, 2021)		
Type of risk	Hedging gains or losses that were recognized in other comprehensive income	Hedge ineffectiveness recognized in profit or loss reclassification adjustment	Amount reclassified from cash flow hedge reserve into the cost of inventories as reclassification adjustment
Commodity price risk	¥13,456	¥—	¥(7,042)

(Unit: Millions of yen)

	FY2021 (Jan. 1 through Dec. 31, 2021)		
Type of risk	Hedging gains or losses that were recognized in other comprehensive income	Hedge ineffectiveness recognized in profit or loss reclassification adjustment	Amount reclassified from cash flow hedge reserve into profit or loss as reclassification adjustment
Exchange rate fluctuations risk ...	¥(10)	¥—	¥(4)

During the fiscal year ended December 31, 2021, no cash flow hedges were discontinued as a result of not executing forecast transactions within the initially anticipated time period.

(Unit: Millions of yen)

	FY2022 (Jan. 1 through Dec. 31, 2022)		
Type of risk	Hedging gains or losses that were recognized in other comprehensive income	Hedge ineffectiveness recognized in profit or loss reclassification adjustment	Amount reclassified from cash flow hedge reserve into the cost of inventories as reclassification adjustment
Commodity price risk	**¥9,060**	**¥—**	**¥(13,022)**

(Unit: Millions of yen)

	FY2022 (Jan. 1 through Dec. 31, 2022)		
Type of risk	Hedging gains or losses that were recognized in other comprehensive income	Hedge ineffectiveness recognized in profit or loss reclassification adjustment	Amount reclassified from cash flow hedge reserve into profit or loss as reclassification adjustment
Exchange rate fluctuations risk ...	**¥2**	**¥—**	**¥56**

During the fiscal year ended December 31, 2022, no cash flow hedges were discontinued as a result of not executing forecast transactions within the initially anticipated time period.

Note 27: Business combinations

FY2021 (Jan. 1 through Dec. 31, 2021)

Acquisition of shares of Molecular Medicine S.p.A. (now AGC Biologics S.p.A.)

On July 31, 2020, the Group acquired 93.23% of the common shares of Molecular Medicine S.p.A., which operates in the field of gene and cell therapy. Whereas the Group disclosed provisional amounts with respect the acquisition in the fiscal year ended December 31, 2020, given that accounting treatment regarding the acquisition price had yet to be finalized, the accounting treatment was finalized during the first three months of the fiscal year ended December 31, 2021.

The Group made Molecular Medicine S.p.A a wholly owned subsidiary by additional acquisition of shares on September 30, 2020.

FY2022 (Jan. 1 through Dec. 31, 2022)

There are no significant transactions to disclose.

Note 28: Commitments

As of December 31, 2021 and 2022, significant contractual commitments relating to the acquisition of property, plant and equipment amounted to ¥5,956 million and ¥9,822 million, respectively.

Note 29: Collateral

Assets pledged as collateral and obligation secured by collateral are as follows:

Assets pledged as collateral

(Unit: Millions of yen)

	FY2021 (as of December 31, 2021)	**FY2022 (as of December 31, 2022)**
Property, plant and equipment	¥5,108	**¥203**
Total	¥5,108	**¥203**

Obligation secured by collateral

(Unit: Millions of yen)

	FY2021 (as of December 31, 2021)	**FY2022 (as of December 31, 2022)**
Long-term bank loans	¥61	**¥43**
Total	¥61	**¥43**

Other than the abovementioned, no ownership restrictions or rights of pledge as collateral for obligation have been established.

Note 30: Contingencies

The Group provides guarantees, etc., for borrowings from financial institutions taken out by companies outside the Group amounting to ¥48 million and ¥6 million as of December 31, 2021 and 2022, respectively. This includes commitments to guarantees, etc., amounting to ¥13 million and ¥2 million as of December 31, 2021 and 2022, respectively.

Note 31: Related parties

Related party transactions

Related party transactions were made on terms equivalent to those that prevail in arm's length transactions.

Breakdown of compensation to directors

(Unit: Millions of yen)

	FY2021 (Jan. 1 through Dec. 31, 2021)	**FY2022 (Jan. 1 through Dec. 31, 2022)**
Monthly compensation and bonuses	¥492	**¥443**
Share-based payment(Note)	184	**148**
Total	¥676	**¥591**

Note 32: Group entities

Major subsidiaries as of December 31, 2022 are as follows:

Subsidiary name	Location	Capital	Main business	Voting rights held by the Company (%)
Consolidated subsidiaries				
Glass				
AGC Glass Kenzai Co., Ltd.	Japan	¥450 million	Production and sales of flat glass, fabricated glass for architectural use and building materials	100.0 (0.0)
AGC Glass Products Co., Ltd.	Japan	¥1,287 million	Production and sales of fabricated glass for architectural use, and cutting and sales of flat glass	100.0 (0.0)
AGC Automotive (Suzhou) Inc.	China	US$236 million	Production and sales of automotive glass	100.0 (0.0)
PT Asahimas Flat Glass Tbk (Note 3)	Indonesia	217 billion rupiah	Production and sales of flat glass, automotive glass and fabricated glass for industrial use	44.5 (0.0)
AGC Flat Glass North America, Inc.	U.S.A.	US$54 million	Production and sales of automotive glass	100.0 (100.0)
AGC Automotive Europe	Belgium	€105 million	Production and sales of automotive glass	100.0 (100.0)
AGC Glass Europe	Belgium	€346 million	Production and sales of flat glass	100.0 (0.0)
Electronics				
AGC Electronics Co., Ltd.	Japan	¥300 million	Production of semiconductor process materials and optoelectronic materials	100.0 (0.0)
AGC Techno Glass Co., Ltd.	Japan	¥300 million	Production and sales of products for illumination, industrial use, laboratory and other medical uses, and production of optoelectronic materials	100.0 (0.0)
AGC Display Glass Taiwan Inc.	Taiwan	NT$3,120 million	Production and sales of glass for electronics	100.0 (100.0)
AGC Display Glass (Huizhou) Co., Ltd.	China	¥45,800 million	Production and sales of glass for electronics	100.0 (0.0)
AGC Advanced Electronics Display Glass (Shenzhen) Co., Ltd.	China	¥33,700 million	Production and sales of glass for electronics	63.0 (0.0)
AGC Fine Techno Korea Co., Ltd.	South Korea	227,000 million won	Production and sales of glass for electronics	100.0 (33.0)
Chemicals				
Ise Chemicals Corporation*	Japan	¥3,599 million	Production and sales of iodine-related products and metallic compounds, extraction and sales of natural gas	53.2 (0.0)
PT Asahimas Chemical	Indonesia	US$84 million	Production and sales of vinyl chloride, vinyl chloride monomer and caustic soda	52.5 (0.0)
AGC Vinythai Public Company Limited	Thailand	9,435 million baht	Production and sales of vinyl chloride, vinyl chloride monomer and caustic soda	65.0 (0.0)
AGC Biologics Inc.	U.S.A.	US$130 million	Development and manufacturing contract of biopharmaceutical	100.0 (100.0)
AGC Biologics A/S	Denmark	42 million Danish krone	Development and manufacturing contract of biopharmaceutical	100.0 (0.0)

Subsidiary name	Location	Capital	Main business	Voting rights held by the Company (%)
Ceramics/Others				
AGC Ceramics Co., Ltd.	Japan	¥3,500 million	Production and sales of various ceramic products	100.0 (0.0)
AGC Singapore Services Pte. Ltd.	Singapore	US$88 million	Procurement of funds and financing services for affiliates in Asia, and holding of shares in affiliates	100.0 (0.0)
AGC America, Inc.	U.S.A.	US$0 million	Holding of shares in affiliates in North America, and information collection	100.0 (0.0)
AGC Capital, Inc.	U.S.A.	US$0 million	Procurement of funds and financing services for affiliates in North America	100.0 (100.0)
Other consolidated subsidiaries	179			
Total consolidated subsidiaries	201			
Equity method affiliates	24			

Notes: 1. Figures disclosed in parentheses in the "Voting rights held by the Company" column represent voting rights held indirectly by the Company.
2. Subsidiaries marked with * in the "Subsidiary name" column have filed a marketable securities report.
3. Although the Group holds less than half of the voting rights, it includes the entity in consolidated subsidiary because it substantially controls the entity.

During the fiscal years ended December 31, 2021 and 2022, there was no individually significant subsidiary having non-controlling interests.

Information for equity method affiliates is presented in Note 12 "Equity method affiliates."

Note 33: Significant subsequent events

Changes in Reportable segments

At the Board of Directors meeting held on January 19, 2023, regarding the reportable segments from the fiscal year ending December 31, 2023 onwards, it was resolved that (1) the former Glass segment would be divided into Architectural Glass and Automotive, and (2) the former Chemicals segment would be divided into Chemicals and Life Science.

Until the fiscal year ended December 31, 2022, the Group has had five in-house companies by product and service: Architectural Glass Europe & Americas, Architectural Glass Asia Pacific, Automotive, Electronics and Chemicals. Each in-house company has operated worldwide, formulating comprehensive domestic and overseas strategies for its products and services.

Architectural Glass Europe & Americas, Architectural Glass Asia Pacific and Automotive share the same float glass manufacturing facilities (glass melting furnace) etc., which are the largest assets and situated the highest upstream in the supply chain. The three in-house companies share assets and liabilities, and ratio of utilization is influenced by fluctuations of demand and supply. Considering these situations, the Group has prepared the financial statements of Architectural Glass Europe & Americas, Architectural Glass Asia Pacific and Automotive as the Glass segment. In addition, decisions on assigning management resources have been closely tied to the results of each business and inseparable from their performance evaluation. Therefore, with the participation of presidents of three in-house companies, the Group has established the meetings such as "Glass Segment Council," which primarily functions to maintain synergies and maximize overall production in the Glass segment Based on these circumstances, the Group has reported the Glass segment as one.

On the other hand, in the architectural glass business and automotive glass business, the architectural glass business will shift to high-value-added products and businesses in the midstream and downstream regions. In the automotive glass business, expansion into the mobility sector will be a strategic pillar, and the relative weight of float strategies in both businesses is declining. In addition, the Group decided to terminate the "Glass Segment Council" at the end of the fiscal year ended December 31, 2022.

In addition, we have determined that Architectural Glass Europe & Americas and Architectural Glass Asia Pacific companies share common economic characteristics, because they are united in their efforts to share information on technological development and production related to float and architectural processing, to create social value of GHG reduction and product contribution to climate change issues, and to take a common commitment for long-term profitability indicators and others, and they have similarities in products and sales markets.

As a result of the above, in view of the decrease in the number of common items to be considered in the development of the business and the shift to a business operation that emphasizes the uniqueness of strategy and speed of decision-making in both the architectural glass and automotive businesses, the Group has decided to reorganize its reportable segments with Architectural Glass Europe & Americas and Architectural Glass Asia Pacific as the Architectural Glass segment and Automotive as the Automotive segment.

In addition, as of January 1, 2023, Chemicals was divided into the Chemicals and Life science, and the reportable segments will be reviewed in accordance with this organizational change. The Chemicals will further concentrate on its core businesses, the essential chemicals business and the performance chemicals business, in order to achieve growth, and the life science business, which has been designated as one of the strategic businesses, was established as an internal company organization under the direct supervision of the CEO, with the aim of further expanding the business by making better use of management resources throughout the Company.

Information regarding the amounts of net sales, profit or loss, and other items by reportable segment in the fiscal year ended December 31, 2022 according to the reportable segment classification after the change is as follows.

FY2022 (Jan. 1 through Dec. 31, 2022)

(Unit: Millions of yen)

	Reportable segments								
	Architectural Glass	Automotive	Electronics	Chemicals	Life Science	Ceramics/ Other	Total	Adjustments	Amount reported on consolidated financial statements
Sales to external customers	¥482,714	¥417,639	¥304,918	¥655,013	¥138,146	¥37,442	¥2,035,874	¥ —	¥2,035,874
Inter segment sales	988	186	2,294	5,367	3,640	49,159	61,636	(61,636)	—
Total sales	483,702	417,825	307,212	660,380	141,787	86,602	2,097,510	(61,636)	2,035,874
Segment profit (loss) [Operating profit]	32,716	(9,822)	14,677	126,085	16,862	3,678	184,197	(255)	183,942
Profit for the year	—	—	—	—	—	—	—	—	22,505
Other items									
Depreciation and amortization	23,918	32,547	68,361	47,489	11,544	1,940	185,802	(146)	185,656
Impairment losses [Non-financial assets]	11,339	10,813	106,085	84	—	125	128,447	—	128,447
Capital expenditures	17,535	29,805	79,995	64,886	43,101	1,442	236,767	(214)	236,553
Investments accounted for using equity method	12,567	5,567	1,168	3,852	—	1,453	24,609	—	24,609

The amounts of intersegment are primarily based on market prices and manufacturing cost.

"Ceramics/Other" mainly handles ceramics products, logistics and financial services.

Moreover, the above amounts of impairment losses (non-financial assets) include the amounts of impairment losses recorded as expenses for restructuring programs.

Plan of Transferring of Russian Business

The AGC Group is primarily engaged in the architectural and automotive glass businesses in Russia. Amidst the uncertain situation in Russia, we have suspended investments, including periodic repairs to our glass production furnaces from March 2022, keeping in mind our employees and customers, and have been closely monitoring the situation. We have begun considering the transfer of our businesses in Russia since February 2023. The Group's policy is to select a transferee operating the businesses continuously. At present, it is difficult to reasonably estimate the impact of these events on the consolidated financial statements.

Purchase of Treasury Stock

At the Board of Directors meeting held on February 8, 2023, the Company resolved to purchase treasury stock pursuant to the provisions of Article 156 of the Companies Act applied by replacing pursuant to the provisions of Article 165, Paragraph 3 of the same.

Reasons for the purchase of treasury stock

The Company acquires treasury stock for the purpose of returning profits to shareholders and improving capital efficiency.

Details of the matters pertaining to the purchase

(1) Class of stock to be purchased:	Common stock of the Company
(2) Total number of shares to be purchased:	16 million shares (upper limit) (7.2% of total shares outstanding (excluding treasury stock))
(3) Total amount of stock purchase:	¥50,000 million yen (upper limit)
(4) Period of purchase:	February 9, 2023, to September 22, 2023
(5) Method of purchase:	Market purchase
(6) Others:	The Company plans to cancel all treasury stock acquired through this transaction by resolution of the Board of Directors in accordance with Article 178 of the Companies Act.

Independent auditor's report

To the Board of Directors of AGC Inc.:

Opinion

We have audited the accompanying consolidated financial statements of AGC Inc. ("the Company") and its consolidated subsidiaries (collectively referred to as "the Group"), which comprise the consolidated statement of financial position as at December 31, 2022, and the consolidated statement of profit or loss and other comprehensive income, changes in equity and cash flows for the year then ended, and notes, comprising significant accounting policies and other explanatory information.

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

Basis for Opinion

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

Key Audit Matters

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

We selected the key audit matters in our audit of the consolidated financial statements of the current fiscal year, taking into consideration the changes in the relative risks and the changes in the cash-generating units. The table below shows the changes from the previous fiscal year.

Item	Previous fiscal year	Current fiscal year
Impairment testing on plant, property and equipment of the display business	Not selected	Selected
Impairment testing on property, plant and equipment of the automotive glass business in Europe (Western and Central Europe) (*) (Previous fiscal year: Impairment testing on property, plant and equipment of the automotive glass business in Europe)	Selected	Selected

Impairment testing on property, plant and equipment of the architectural and automotive glass businesses in Russia	Not selected	Selected
Impairment testing on the goodwill and intangible assets arising from the acquisition of the super high-end CCL business and other	Selected	Not selected

* The cash-generating units were changed and the automotive glass business in Russia was separated from the automotive glass business in Europe for the current fiscal year. The name of the business from which the separation was made was changed to the automotive glass business in Europe (Western and Central Europe).

Reasonableness of the management's estimate of the fair value less costs of disposal used for the impairment testing on property, plant and equipment of the display business

The key audit matter	How the matter was addressed in our audit
As described in Note 11 "Impairment of non-financial assets" to the consolidated financial statements, an impairment loss of JPY73,673 million on property, plant and equipment and other of the display business, which is included in the Electronics segment, was included in other expenses in the consolidated statement of profit or loss of the Group for the current fiscal year. Property, plant and equipment of JPY1,350,769 million recognized in the consolidated statement of financial position as at December 31, 2022 included property, plant and equipment of the display business amounting to JPY306,413 million (after the recognition of an impairment loss), which represented approximately 10.9% of total assets. As described in Note 3 "Significant accounting policies, (9) Impairment of non-financial assets" to the consolidated financial statements, each asset of property, plant and equipment, or the cash-generating unit to which the asset belongs, is assessed for any indication of impairment at the end of each reporting period, and tested for impairment whenever there is such an indication. If the carrying amount exceeds the recoverable amount in the impairment testing, the carrying amount is reduced to the recoverable amount, and the resulting decrease in the carrying amount is recognized as an impairment loss. The recoverable amount is the higher of either the value in use or the fair value less costs of disposal. The display business has recognized a deteriorated operating result primarily due to the	The primary procedures we performed to assess whether the estimate of the fair value less costs of disposal used for the impairment testing on property, plant and equipment of the display business was reasonable are set forth below. (1) Internal control testing We tested the design and operating effectiveness of certain of the Company's internal controls relevant to measuring the fair value less costs of disposal used for the impairment testing on the cash-generating units. (2) Reasonableness of the measurement of the fair value less costs of disposal We performed the following procedures to assess the appropriateness of the selection of the valuation techniques, models and input data used for measuring the fair values. ● Comparison of the prices of precious metals to the transaction prices at a date closest to the end of the current fiscal year published by external organizations. ● The following procedures performed by engaging valuation specialists within our domestic and international network firms; • Assessment of the competence, ability and objectivity of the external experts used by management; • Inquiry of management and external experts used by management regarding the selection of the valuation techniques and the selection of the models used for measuring the fair value less costs of

<table>
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<td>impact of slow sales of televisions, personal computers and related items, and the increased cost caused by the weaker yen and the soaring raw materials and fuel prices, which resulted in an indication of impairment for the cash-generating unit to which its property, plant and equipment belong. Therefore, an impairment test was performed at the end of the current fiscal year. As a result, an impairment loss was recognized since the recoverable amount was less than the carrying amount of the cash-generating unit. Management uses the fair value less costs of disposal as the recoverable amount, which is measured by using mainly the market approach and the cost approach for land, buildings, machinery and equipment, and others (excluding precious metals) and by using the market approach for precious metals included in machinery and equipment.

When applying the market approach and the cost approach, selecting appropriate valuation techniques, models and input data requires a high degree of expertise in valuation.

We, therefore, determined that our assessment of the reasonableness of the management's estimate of the fair value less costs of disposal used for the impairment testing on property, plant and equipment of the display business was one of the most significant in our audit of the consolidated financial statements of the current fiscal year, and accordingly, a key audit matter.</td>
<td>disposal; and
• Comparison of the key input data, such as the examples of market transactions and the price fluctuations, to the information sources published by external organizations.

● Assessment of the appropriateness of the work performed by the valuation specialists within our domestic and international firms by inspecting their work results, and assessing the relevance and reasonableness of the conclusions drawn by them, and consistency with other audit evidence.</td>
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<td colspan="2">Reasonableness of the management's estimate of the value in use used for the impairment testing on property, plant and equipment of the automotive glass business in Europe (Western and Central Europe)</td>
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<td>The key audit matter</td>
<td>How the matter was addressed in our audit</td>
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<td>As described in Note 11 "Impairment of non-financial assets" to the consolidated financial statements, an impairment loss of JPY6,700 million on property, plant and equipment and other of the automotive glass business in Europe (Western and Central Europe), which is included in the Glass segment, was included in other expenses in the consolidated statement of profit of the Group for the current fiscal year. Property, plant and equipment of JPY1,350,769 million recognized in the consolidated statement of financial position as at December 31, 2022</td>
<td>The primary procedures we performed to assess whether the estimate of the value in use used for the impairment testing on property, plant and equipment of the automotive glass business in Europe (Western and Central Europe) was reasonable are set forth below. We requested the component auditor of AGC Glass Europe, a consolidated subsidiary that operates the business, to perform certain of these audit procedures. Then we evaluated the report of the component auditor as</td>
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included property, plant and equipment of the automotive glass business in Europe (Western and Central Europe) amounting to JPY51,527 million (after the recognition of an impairment loss), which represented approximately 1.8% of total assets. As described in Note 3 "Significant accounting policies, (9) Impairment of non-financial assets" to the consolidated financial statements, each asset of property, plant and equipment, or the cash-generating unit to which the asset belongs, is assessed for any indication of impairment at the end of each reporting period, and tested for impairment whenever there is such an indication. If the carrying amount exceeds the recoverable amount in the impairment testing, the carrying amount is reduced to the recoverable amount, and the resulting decrease in the carrying amount is recognized as an impairment loss. The recoverable amount is the higher of either the value in use or the fair value less costs of disposal. Since product and other transactions and provision of information technologies and other services between the AGC groups in Western and Central Europe and Russia have been significantly restricted due to the deteriorating situation in Russia and Ukraine, the cash-generating units were changed and the automotive glass business in Russia was separated from the automotive glass business in Europe for the current fiscal year. The automotive glass business in Europe (Western and Central Europe) has recognized recurring operating losses since before the previous fiscal year and the business environment has further deteriorated primarily due to the slow automotive demand caused by the situation in Russia and Ukraine, which resulted in an indication of impairment for the cash-generating unit to which its property, plant and equipment belong. Therefore, an impairment test was performed at the end of the current fiscal year. As a result, an impairment loss was recognized since the recoverable amount was less than the carrying amount of the cash-generating unit due to the revisions of the business plan and the discount rate from the previous fiscal year. Management used the value in use as the recoverable amount, which was calculated by discounting to the present value at 14% the	to whether sufficient and appropriate audit evidence was obtained. (1) Internal control testing ● Test of the design and operating effectiveness of certain of AGC Glass Europe's internal controls relevant to measuring the value in use of the cash-generating unit. (*) ● Test of the design and operating effectiveness of certain of the Company's internal controls relevant to estimating the discount rate. (**) (2) Assessment of the reasonableness of the estimated value in use ● Assessment of the appropriateness of key assumptions embedded in the business plan of the automotive glass business in Europe (Western and Central Europe), which formed the basis for estimating future cash flows, by performing the following procedures: (*) • Comparison of future sales volume with actual results of past sales volume and forecasts of the automotive market in Western and Central Europe published by external research organizations; • Inquiry of management and inspection of the relevant materials and comparison with historical trends of selling prices regarding the fluctuation of selling prices due to the impact of the soaring raw materials and fuel prices; • Inquiry of management and the inspection of the relevant materials regarding the action plans for the improvement of productivity and cost reductions; and • Analysis of the past budget including the causes of variances to evaluate the accuracy of the business plan. ● Assessment of the appropriateness of the model used to estimate the discount rate and the comparison of the input data that formed the basis for estimating the discount rate with the information published by external organizations, by engaging a valuation specialist within our domestic network firms. (**)

future cash flows that were estimated based on the five-year business plan of the automotive glass business in Europe (Western and Central Europe) developed by management, taking into consideration the future growth potential of the business thereafter. The business plan of the automotive glass business in Europe (Western and Central Europe), which formed the basis for estimating future cash flows, included certain key assumptions such as the prospects for an increase in sales volume based on the premise that automotive production volume would gradually recover, fluctuation of selling prices in light of the impact of the soaring raw materials and fuel prices, improved productivity and cost reductions, and these management assumptions involved a high degree of uncertainty. Accordingly, management's judgment thereon had a significant effect on the estimated future cash flows. In addition, selecting appropriate models and input data for estimating the discount rate used to calculate the value in use requires a high degree of expertise in valuation. We, therefore, determined that our assessment of the reasonableness of the management's estimate of the value in use used for the impairment testing on property, plant and equipment of the automotive glass business in Europe (Western and Central Europe) was one of the most significant in our audit of the consolidated financial statements of the current fiscal year, and accordingly, a key audit matter.	* Procedures performed by the component auditor of AGC Glass Europe ** Procedures performed by us

Reasonableness of the management's estimate of the value in use used for the impairment testing on property, plant and equipment of the architectural and automotive glass businesses in Russia

The key audit matter	How the matter was addressed in our audit
As described in Note 11 "Impairment of non-financial assets" to the consolidated financial statements, other expenses in the consolidated statement of profit of the Group for the current fiscal year included impairment losses on property, plant and equipment and other of JPY9,922 million for the architectural glass business in Russia and JPY3,664 million for the automotive glass business in Russia, both of which are included in the Glass segment. Property, plant and equipment of JPY1,350,769 million recognized in the consolidated statement	The primary procedures we performed to assess whether the estimate of the value in use used for the impairment testing on property, plant and equipment of the architectural and automotive glass businesses in Russia was reasonable are set forth below. We requested the component auditor of AGC Glass Europe, a consolidated subsidiary that operates the businesses, to perform certain of these audit procedures. Then we evaluated the report of the component auditor as to whether sufficient and appropriate audit evidence was obtained.

of financial position as at December 31, 2022 included property, plant and equipment of the architectural and automotive glass businesses in Russia amounting to JPY8,339 million and 760 million (after the recognition of an impairment loss), respectively, which represented approximately 0.3% of total assets. As described in Note 3 “Significant accounting policies, (9) Impairment of non-financial assets” to the consolidated financial statements, each asset of property, plant and equipment, or the cash-generating unit to which the asset belongs, is assessed for any indication of impairment at the end of each reporting period, and tested for impairment whenever there is such an indication. If the carrying amount exceeds the recoverable amount in the impairment testing, the carrying amount is reduced to the recoverable amount, and the resulting decrease in the carrying amount is recognized as an impairment loss. The recoverable amount is the higher of either the value in use or the fair value less costs of disposal. Since product and other transactions and provision of information technologies and other services between the AGC groups in Western and Central Europe and Russia have been significantly restricted due to the deteriorating situation in Russia and Ukraine, the architectural and automotive glass businesses in Russia were separated from the architectural and automotive glass businesses in Europe for the current fiscal year. The economic environment of the architectural and automotive glass businesses in Russia deteriorated due to the prolonged Russian -Ukraine situation, which resulted in an indication of impairment for the cash-generating units to which property, plant and equipment of these businesses belong. Therefore, impairment testing was performed at the end of the current fiscal year. As a result, impairment losses were recognized since the recoverable amounts were less than the carrying amounts of the cash-generating units. Management used the value in use as the recoverable amounts, which were calculated by discounting to the present value at 28% the future cash flows that were estimated based on the five-year business plans of the architectural and automotive glass businesses in Russia developed by management, taking into	(1) Internal control testing ● Test of the design and operating effectiveness of certain of AGC Glass Europe’s internal controls relevant to measuring the value in use of the cash-generating units. (*) ● Test of the design and operating effectiveness of certain of the Company’s internal controls relevant to estimating the discount rate. (**) (2) Assessment of the reasonableness of the estimated value in use ● Assessment of the appropriateness of key assumptions embedded in the business plans of the architectural and automotive glass businesses in Russia, which formed the basis for estimating future cash flows, by performing the following procedure, among others: (*) • Inquiry of management and comparison with information published by external organizations regarding the forecasts of the market growth in light of the current economic environment in Russia, which formed the basis for forecasts of sales volume. ● Assessment of the appropriateness of the model used to estimate the discount rate and the comparison of the input data that formed the basis for estimating the discount rate with the information published by external organizations, by engaging a valuation specialist within our domestic network firms. (**) * Procedures performed by the component auditor of AGC Glass Europe ** Procedures performed by us

consideration the future growth potential of the business thereafter. The business plans of the architectural and automotive glass businesses in Russia, which formed the basis for estimating future cash flows, included forecasts of sales volume in light of the current economic situation, and these management assumptions involved a high degree of uncertainty. Accordingly, management's judgment thereon had a significant effect on the estimated future cash flows. In addition, selecting appropriate models and input data for estimating the discount rate used to calculate the value in use requires a high degree of expertise in valuation. We, therefore, determined that our assessment of the reasonableness of the management's estimate of the value in use used for the impairment testing on property, plant and equipment of the architectural and the automotive glass businesses in Russia was one of the most significant in our audit of the consolidated financial statements of the current fiscal year, and accordingly, a key audit matter.	

Other Information

The other information comprises the information included in "Financial Review", but does not include the consolidated financial statements and our auditor's reports thereon. Management is responsible for the preparation and presentation of the other information. Audit & Supervisory Board and its Members are responsible for overseeing the directors' performance of their duties with regard to the design, implementation and maintenance of the reporting process for the other information.

Our opinion on the consolidated financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the consolidated financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the consolidated financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact.

We have nothing to report in this regard.

Responsibilities of Management and Auditors & Supervisory Board and its Members for the Consolidated Financial Statements

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

In preparing the consolidated financial statements, management is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern in accordance with IFRS 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.

Auditors & Supervisory Board and its Members are responsible for overseeing the directors' performance of their duties with regard to the design, implementation and maintenance of the Group's financial reporting process.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with auditing standards generally accepted in Japan 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 our audit in accordance with auditing standards generally accepted in Japan, 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, while the objective of the audit is not to express an opinion on the effectiveness of the Group's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.
- Evaluate whether the presentation and disclosures in the consolidated financial statements are in accordance with IFRS, 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 Auditors & Supervisory Board and its Members regarding, among other matters, the planned scope and timing of the audit, significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

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

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

Interest required to be disclosed by the Certified Public Accountants Act of Japan

We do not have any interest in the Group which is required to be disclosed pursuant to the provisions of the Certified Public Accountants Act of Japan.

/S/ Noriaki Habuto
Designated Engagement Partner
Certified Public Accountant

/S/ Tsutomu Ogawa
Designated Engagement Partner
Certified Public Accountant

/S/ Takahiro Kajiwara
Designated Engagement Partner
Certified Public Accountant

KPMG AZSA LLC
Tokyo Office, Japan
March 30, 2023

Notes to the Reader of Independent Auditor's Report:
This is a copy of the Independent Auditor's Report and the original copies are kept separately by the Company and KPMG AZSA LLC.

AGC Inc.
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