



Your Dreams, Our Challenge

# AGC Integrated Report 2023

For the Year Ended December 31, 2022



## This report describes the AGC Group's initiatives for long-term, continuous enhancement of corporate value.

In accordance with its **"Look Beyond"** vision, the AGC Group seeks continuous enhancement of corporate value over the long term.

With investors and a wide range of other stakeholders as its target readers, *AGC Integrated Report 2023* explains the management approach and specific measures that the AGC Group is taking to enhance corporate value.

Alongside messages from the management team, the report provides detailed explanations of key strategies for realizing the long-term management strategy Vision 2030 as well as information on progress under our medium-term management plan **AGC plus-2023**. We sincerely hope that this report deepens readers' understanding of the long-term approach to business management that we have tirelessly pursued.

### The AGC Group's **AGC plus 2.0** Management Policy

Based on its **AGC plus 2.0** Management Policy, the AGC Group will realize sustainable growth by providing additional value to all stakeholders.

#### **AGC plus 2.0**

The AGC Group adds a "plus" by

- Providing safety, security, and comfort to society;
- Creating new value and functions for customers and business partners and building trust with them;
- Enhancing job satisfaction among employees;
- Increasing the Group's corporate value for investors;
- Building a better future for the coming generations

Hideyuki Kurata

Representative Director,  
Executive Vice President, CTO

Yoshinori Hirai

Representative Director,  
President & CEO

Shinji Miyaji

Representative Director,  
Senior Executive Vice President, CFO, CCO



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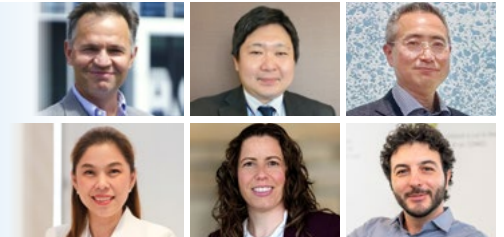
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### Business Strategies

Messages from and dialogues with employees of the AGC Group provide concrete explanations of its value creation.



### Management Foundations Supporting Growth

The corporate governance section includes an interview with Hiroyuki Yanagi, who became chairperson of the Board of Directors in 2022, as well as messages from Keiko Honda, who is chairperson of the Nominating Committee, and Isao Teshirogi, who is chairperson of the Compensation Committee.



**Reporting Scope** (report issued in May 2023)  
**Reporting Period** January 1 to December 31, 2022  
**Reporting Organizations**  
 AGC Inc. and its 201 consolidated subsidiaries in and outside Japan  
**Principal Expressions and Their Scope**  
 "The AGC Group" refers to the abovementioned reporting organizations. "AGC" refers to AGC Inc. on a non-consolidated basis.

**Reference Framework**  
 In preparing this report, the International Integrated Reporting Framework advocated by the IFRS (International Financial Reporting Standards) Foundation and the Guidance for Collaborative Value Creation published by the Ministry of Economy, Trade and Industry have been used as references.



#### The Cover

The cover design expresses our commitment to building a better future for the coming generations in accordance with the **AGC plus 2.0** Management Policy.



# Main Communication Tools of the AGC Group

## Financial Information



### AGC Integrated Report 2023 (this report)

Introducing a wide range of corporate policies, business strategies, and activities aimed at enhancing corporate value over the long term

[https://www.agc.com/en/company/agc\\_report/index.html](https://www.agc.com/en/company/agc_report/index.html)

PDF



### Financial Review 2022 (English version only)

Reporting on financial matters, including business overviews and consolidated financial statements

<https://www.agc.com/en/ir/library/financial/index.html>

Web



### Shareholder and Investor Information

Distributing detailed, timely information on the AGC Group to investors, with a focus on financial information

<https://www.agc.com/en/ir/index.html>



### The AGC Website

Providing a broad range of in-depth, timely information on the AGC Group

<https://www.agc.com/en/>

## Non-Financial Information



### AGC Sustainability Data Book 2023

Reporting on non-financial data and policies for various initiatives aimed at achieving sustainability (publication scheduled for August 2023)


<https://www.agc.com/en/sustainability/book/index.html>



### Sustainability Information

Reporting on non-financial data and policies for various initiatives aimed at achieving sustainability

<https://www.agc.com/en/sustainability/index.html>



Since our founding, we have continued to transform and challenge ourselves to realize the dreams of people around the world.

Glass is indispensable for both industry and daily life. Established in 1907, Asahi Glass Company became the first company to manufacture glass in Japan. This breakthrough marked the beginning of the AGC Group's history of taking on challenges. Since then, the AGC Group has tirelessly transformed itself to provide differentiated materials and solutions based on a broad range of materials technologies, functional design capabilities, and production technologies. In this way, we have continued challenging ourselves to realize the dreams of people worldwide.



## Our Mission

### AGC, an Everyday Essential Part of Our World

AGC's unique materials and solutions make people's lives better around the world every day.

Our Mission sets out the value that we should provide to society alongside our significance. While pursuing self-transformation, the AGC Group has been fulfilling this mission.

Formulated in 2021, the long-term management strategy Vision 2030 shows the direction of forward-looking *business portfolio transformation*, which will ensure we remain *an everyday essential part of our world*.

### The long-term management strategy Vision 2030

By providing differentiated materials and solutions, AGC strives to help realize a sustainable society and become an excellent company that grows and evolves continuously.

To meet the needs of local communities and society at large, we have delivered differentiated materials and solutions to the world while continuing to transform our business portfolio.

With the Glass Segment as its founding business, the AGC Group has extended the breadth of its business portfolio by providing materials and solutions that are indispensable to the advancement of industries in the fields of chemicals, ceramics, and electronics. Further, the Group has pioneered the opening up of overseas markets and helped develop regions worldwide. While delivering differentiated materials and solutions to the world, we have reflected the changing demand in each era and region by constantly evolving our business portfolio.



### Self-transformation in line with society's needs



Demand for glass increases rapidly due to a construction boom as Japan modernizes.

1909



The Company begins domestic production of flat glass.



As Japan's economy grows rapidly, televisions quickly become household items.

1955



We begin production of glass bulbs for television cathode ray tubes.



With the development of the road network, demand for automobiles rises dramatically.

1956



The Company begins the Automotive Glass Business in earnest.



Pollution control measures are implemented in earnest due to pollution problems in various regions of Japan.

1975



We develop the FLEMION™ fluoropolymer ion-exchange membrane electrolysis method.



Such global environmental issues as the emergence of global warming receive greater attention.

1991

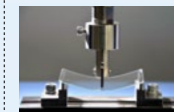


We begin production of alternative fluorocarbon Asahiklin AK-225.



Smartphones become popular worldwide, and the evolution and development of their functions accelerates.

2011



The Company launches a business engaged in the production of chemically tempered glass for smartphones.

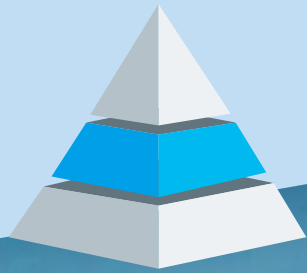


The life science market expands due to technological advances in the pharmaceutical field.

2017



We acquire a global biopharmaceutical CDMO.



## Our Shared Values

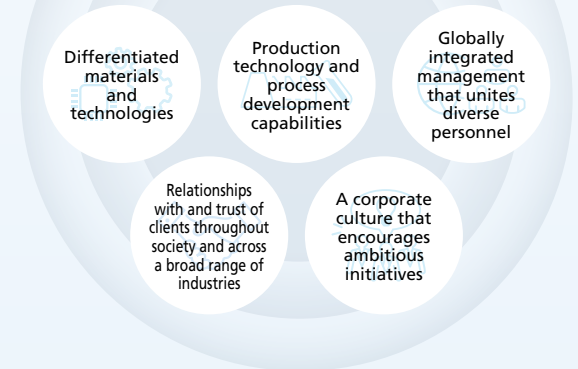
- Innovation & Operational Excellence
- Diversity
- Environment
- Integrity

Our Shared Values set out key ideas that are shared by all AGC Group employees and which inform all of their actions. These values are Innovation & Operational Excellence, Diversity, the Environment, and Integrity. We place particular emphasis on Innovation & Operational Excellence, which is the source of our competitive advantages. Moreover, Diversity, the Environment, and Integrity form the basis to realize Innovation & Operational Excellence. By putting these four values into practice, we fulfill Our Mission.

## Through our four shared values and five strengths, we will create value.

In addition to our four shared values, the five strengths that we have cultivated through a history stretching back more than 110 years are *relationships with and the trust of clients throughout society and across a broad range of industries, differentiated materials and technologies, production technology and process development capabilities, globally integrated management that unites diverse personnel, and a corporate culture that encourages ambitious initiatives*. These values and strengths form foundations that enable the Group to sustain value creation over the long term.

## Five Strengths Cultivated throughout Our History



### Innovation & Operational Excellence

“Innovation” represents our commitment to being an innovative company, while “Operational Excellence” represents a commitment to seeking the highest levels of efficiency and quality in all business activities—which is the well-being wellspring of competitiveness in the manufacturing industry. Our philosophy is not to focus only on Innovation or only on Operational Excellence but rather to emphasize both Innovation & Operational Excellence.



### Diversity

In the global management of the AGC Group, respecting cultural diversity and the diversity of personnel without making distinctions based on gender, background, race, ethnicity, religion, language, or nationality is essential. By always respecting different viewpoints and opinions and fostering diversity, we are able to combine everyone’s knowledge, leading to the creation of new value.

### Environment

The continuity of the AGC Group’s business activities is premised on improving workplace conditions, so that employees can work safely and healthily, and helping realize a sustainable society in accordance with a commitment to the preservation of the natural environment.

### Integrity

A company is a member of society. Without the trust of society, the AGC Group’s businesses would not be possible. In addition to complying with laws and regulations, we will continue to be faithful to high ethical standards and build transparent and fair relationships with all stakeholders. At the same time, we will ensure the satisfaction and trust of our customers by always being sincere.

## Our Spirit

“Never take the easy way out,  
but confront difficulties.”

“Our Spirit” refers to the basic AGC mindset, which all members of the AGC Group inherit and put into practice from generation to generation. Our Spirit is based on the founding spirit advocated by Toshiya Iwasaki, the founder of the AGC Group. His motto was “Never take the easy way out, but confront difficulties.” This has been passed down through the generations as a motto that encourages personnel to take on challenges and face difficulties.

## Our Founding Spirit

Never take the easy way out,  
but confront difficulties  
Trust is the best way to inspire people  
Strive to develop technologies that  
will change the world  
A sense of mission leads us to advance

## With an undaunted spirit, we have overcome many difficulties.

Despite numerous challenges, Toshiya Iwasaki achieved the domestic production of flat glass. With unwavering commitment, he also successfully took on the challenge of manufacturing refractory bricks and soda ash, thereby laying the foundation for the current Ceramics and Chemicals businesses. Since then, the AGC Group has overcome numerous difficulties to create differentiated materials and solutions. This ambitious mindset has been passed on to the AGC Group’s approximately 57,600 employees

A timeless founding spirit  
shared by approximately  
**57,600** Group employees



## Taking on the Challenge of Producing Flat Glass Domestically



AGC's founder

Toshiya Iwasaki

As Japan modernized in the early 20th century, the country saw increases in demand for Western-style buildings and for window glass. However, the country was still dependent on imports of flat glass from overseas. Many different companies had tried to manufacture flat glass domestically, but all had failed, unable to compete with imported products.

Nonetheless, with the aim of creating a business that would help advance his society, AGC's founder Toshiya Iwasaki decided to tackle the challenging problem. “I am prepared to face difficulties. Even if it takes a lifetime, I will realize domestic production.” With this declaration of intent, in 1907 he established the Asahi Glass Company and began constructing a large-scale factory that incorporated technology from Belgium. In 1909, the factory was completed and achieved industrial production of flat glass for the first time in Japan. Difficulties persisted, however, as the Company was still unable to match the quality and prices of imported products. Undaunted, Iwasaki introduced new technology from the United States to a factory completed in 1914, thereby bringing the prospect of rivaling imported products within reach. Furthermore, the outbreak of World War I halted imports of flat glass from Europe, providing a tailwind that rapidly spread domestically produced flat glass. Thus, Iwasaki's unwavering commitment over half a lifetime finally bore fruit.



## A Message from the President & CEO

We will enhance corporate value by continuously growing and evolving through *business portfolio transformation* and the *promotion of sustainability management*.



Yoshinori Hirai

Representative Director, President & CEO

## Realization of Vision 2030

### Growth Strategy Based on Our Long-Term Vision

The AGC Group formulates and implements medium-term management plans based on Vision 2030, which spans a 10-year period. The first medium-term management plan, **AGC plus-2023**, was created in February 2021 and is now in its third year.

Compared with 2021, during which business results recovered rapidly from the COVID-19 pandemic, 2022 contained steady improvements in the performances of Strategic Businesses offset by impairment losses recognized in certain businesses. Consequently, loss for the year attributable to owners of the parent was recorded. However, the AGC Group is steadily creating a business structure that ensures both growth and resilience to market fluctuations.

This emerging structure is attributable to *business portfolio transformation* based on “organizational ambidexterity,”\*<sup>1</sup> which we have been pursuing from a long-term perspective. Here, I would like to discuss our goals and our efforts to date.

\*1 Organizational ambidexterity refers to the ability of an organization to explore new technologies and markets while exploiting mature ones. This concept has been proposed by, among others, Professor Charles A. O'Reilly of Stanford University's Graduate School of Business in the United States.

### Origins of AGC's Organizational Ambidexterity

The AGC Group's current goals originated in 2015. At the time, the Group was struggling to overcome lackluster business results. The Display Business—previously a growth business and earnings mainstay—had matured but we had yet to develop another earnings mainstay to replace it. After fundamental reassessment of our overall goals, we formulated Vision 2025 (our target profile looking 10 years ahead) and announced it in 2016. Under the new vision, the Group aimed to strengthen the profitability of Core Businesses, including the Glass Business, the Chemicals Business, and other existing businesses. However, these measures alone would not have been enough to achieve significant corporate growth. Therefore, we decided to develop new business fields and defined three strategic areas—the Mobility, Electronics, and Life Science businesses. This marked the start of a business model in which the Group pursues overall profitability and growth by generating cash from Core Businesses while actively investing in Strategic Businesses. Although we were unaware of it at the time, formulating Vision 2025 was our first step on the road to organizational ambidexterity.

### "Organizational Ambidexterity" in the AGC Group



### Creating Both Economic and Social Value

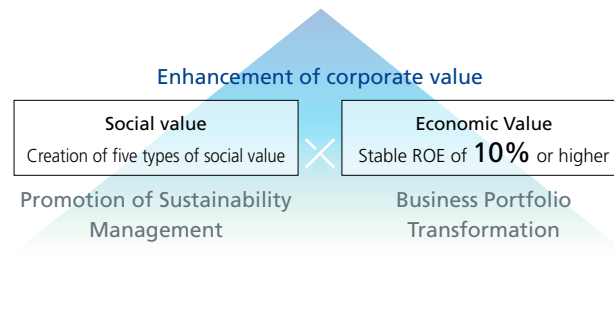
In 2021, aiming to accelerate growth through organizational ambidexterity, we replaced Vision 2025 with Vision 2030. When we launched the new vision, we entered the "second chapter" of our corporate transformation. Moreover, the vision reaffirmed the Group's commitment to helping to realize a sustainable society while continuing to grow and evolve as a corporate group. Although our basic growth strategy remained unchanged in Vision 2030, setting out the simultaneous creation of economic and social value\*2 as a goal in the vision represented a major stride forward in our evolution.

Today, we are focusing efforts on both *business portfolio transformation* and the *promotion of sustainability management* to enhance corporate value.

\*2 Based on the long-term social issues that we have identified as our material issues, we will create social value in five areas by contributing to the realization of a sustainable global environment, the realization of a safe and comfortable urban infrastructure, the realization of safe and healthy lifestyles, the maintenance of a healthy and secure society, and the creation of fair and safe workplaces.

### Vision 2030

By providing differentiated materials and solutions, AGC strives to help realize a sustainable society and become an excellent company that grows and evolves continuously.



### Goals and Progress of Business Portfolio Transformation

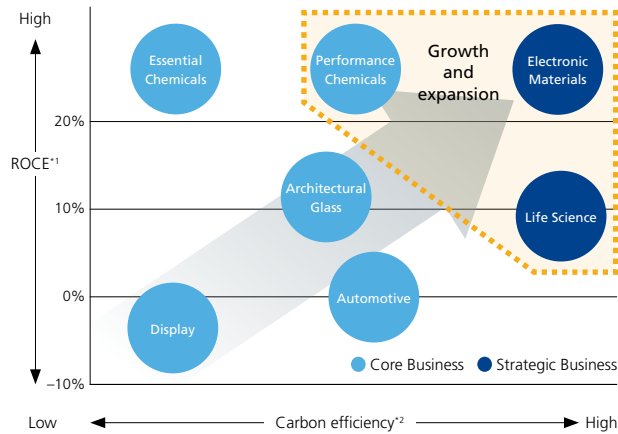
Through organizational ambidexterity, the AGC Group will build a business portfolio that is resilient to changes in market conditions and has high asset efficiency, growth potential, and carbon efficiency.

The robust growth of the Group's Strategic Businesses—even as the COVID-19 pandemic badly affected many industries around the world—once again demonstrated that the structures of these businesses are highly resilient to market fluctuations. Furthermore, the growth of Strategic Businesses will contribute significantly to improving the asset and carbon efficiency of the AGC Group as a whole.

Meanwhile, we are steadily strengthening Core Businesses. In the Chemicals Business, investments to expand operations have proven successful, and structural reform of the Architectural Glass Business has enhanced its profitability. While each of these businesses is affected by market fluctuations, by strengthening their earnings bases we have stabilized the overall performance of Core Businesses. As issues remain in some Core Businesses, we will continue reforms to further improve and stabilize their profitability as a whole. We are also actively reducing the greenhouse gas (GHG) emissions of Core Businesses, and we will continue improving their carbon efficiency.



Direction of Business Portfolio



\*1 Created based on ROCE in 2022

\*2 Created based on 2021 CO<sub>2</sub> emissions per unit of 2022 net sales

Sustainability Management

Concern over environmental issues such as climate change is growing worldwide. The materials industry, which we belong to, is a major source of GHG emissions. As a corporate group with a leading market share in some sectors of the industry, the AGC Group has a responsibility to future generations. With this in mind, we have defined five types of social value that we will create, which include *contributing to the realization of a sustainable global environment*. I believe that addressing climate change is a particularly important theme in terms of both the risks and opportunities associated with it.

As part of its climate change initiatives, the AGC Group has announced its intention to achieve *net-zero carbon emissions* by fiscal 2050. As milestones on the way to

achieving this goal, we have set 2030 reduction targets for Scope 1\*<sup>3</sup> and Scope 2\*<sup>4</sup> GHG emissions. In addition, we established a new Scope 3\*<sup>5</sup> GHG emissions reduction target in 2022. Moreover, these targets have been certified by the Science Based Targets initiative (SBTi).\*<sup>6</sup>

Meanwhile, human resources-related issues constitute another major social trend. Diversity, equity, and inclusion are not only essential for *the creation of fair and safe workplaces* but also for innovation. Accordingly, in 2022 the AGC Group established a Diversity Council, chaired by the president & CEO. Part of the council's activities include setting targets for gender-related issues—which are particularly pressing in Japan—and promoting initiatives to meet these targets.

\*3 Direct GHG emissions from the business operator (fuel combustion and industrial processes)

\*4 Indirect GHG emissions derived from the use of electricity, heat, and steam supplied by other parties

\*5 Indirect emissions not included in Scope 1 and Scope 2 (emissions from upstream and downstream activities)

\*6 An initiative that calls on companies to set reduction targets consistent with scientific findings in order to limit the increase in global average temperature to less than 1.5°C

*AGC People: the driver of our growth!*  
Sustainable Growth Supported by a Proactive Culture

The AGC Group itself must become sustainable if it is to help make society sustainable. Ultimately, efforts to achieve sustainability are enabled by personnel. Since its earliest days, the AGC Group has valued personnel and encouraged them to take on challenges based on its founding spirit: "Never take the easy way out, but confront difficulties." The corporate culture fostered by this mindset has established our competitive advantages. As president & CEO,

I participate in more than 100 face-to-face meetings with AGC Group members each year. At these meetings, I repeatedly emphasize that Group members should take on challenges without fear of failure and that, even when their initiatives fail, their courage should foster respect from their coworkers. We also place great emphasis on employee engagement. Accordingly, we have conducted a worldwide employee engagement survey since 2005. Through such initiatives, we aim to evolve our corporate culture and thereby realize our personnel management slogan, *AGC People: the driver of our growth!*\*<sup>7</sup>

\*7 This expresses a situation in which each of us maximizes our abilities and works together to build a strong organization, and as a result we pursue and achieve business strategies and organizational goals as well as growth of the Company and individuals.

Continuous Growth and Evolution

Reviewing the Initiatives of the Past Two Years

Looking back over 2021 and 2022, I believe that we have laid the groundwork for *business portfolio transformation* and the *promotion of sustainability management*. For example, with regard to *business portfolio transformation*, we significantly exceeded the operating profit target of the medium-term management plan **AGC plus-2023** in its first year. Based on this initial progress, we set operating profit targets for 2025 and 2030 of ¥250.0 billion and ¥300.0 billion. As our efforts up to that point produced favorable results in the first year of the plan, we were able to clarify the next targets to be achieved. However, in the

second year of the plan, issues arose that needed to be addressed in order to facilitate our future development. Following analysis of the recoverability of the Architectural Glass and Automotive Glass businesses in Russia, the Automotive Glass Business in Europe (excluding Russia), the Display Business, and the Printed Circuit Board Materials Business, we recorded a total of ¥128.4 billion in impairment losses in 2022.



### Accelerating Corporate Transformation

Our target profile is set out in Vision 2030: “By providing differentiated materials and solutions, AGC strives to help realize a sustainable society and become an excellent company that grows and evolves continuously.” If this target profile is the summit of a mountain, then the past two years have been a period of preparing and deciding how best to reach the summit. We must now begin to climb to the summit in earnest. We will continue to unwaveringly focus on our goals while advancing the structural reform of Core Businesses and accelerating corporate transformation.

### Becoming Resilient to Business Environment Changes

As demonstrated by the rapid changes in the business environment over the past few years, unexpected events can occur on the way to the summit. The long-term social issues identified as AGC’s material issues present a wide variety of significant opportunities and risks. This diversity reflects the breadth of our business portfolio. From another perspective, the diversity of our business portfolio means that certain events do not expose all of our businesses to risk. In fact, certain events can create opportunities for certain businesses. Indeed, recent

performance trends have demonstrated the benefits of a diverse business portfolio. Although the Automotive and Display businesses, which generated a lot of revenue until a few years ago, have seen their performance decline significantly due to changes in the business environment, the businesses identified as growth areas in 2016 are flourishing and helping improve the profitability of the AGC Group as a whole. Vision 2030 requires us to become a company that “grows and evolves continuously.” Over the course of its history, the AGC Group has weathered dramatic changes in the business environment through relentless efforts to grow and evolve.

Although the long-term goals of our business management remain unchanged, we will closely monitor short-term fluctuations in the business environment as we make progress in *business portfolio transformation* and *the promotion of sustainability management* to create both economic and social value. In this way, we will realize the long-term management strategy Vision 2030.

### Making People’s Lives Better Around the World Every Day

#### Creating Five Types of Social Value by Fulfilling Our Mission

Based on the long-term social issues that we have identified as our material issues, we will create social value in five areas by contributing to *the realization of a sustainable*

*global environment, the realization of a safe and comfortable urban infrastructure, the realization of safe and healthy lifestyles, the maintenance of a healthy and secure society, and the creation of fair and safe workplaces.* To give examples from growth fields, the Life Science Business, a Strategic Business, contributes to the realization of *safe and healthy lifestyles*. As for Core Businesses, the Chlor-Alkali Business is supporting *the realization of a safe and comfortable urban infrastructure* in Southeast Asia.

As stated in AGC's Group Vision **"Look Beyond,"** Our Mission calls for AGC to be "an Everyday Essential Part of Our World." The role we should always play in society—is best summed up by this statement: *AGC's unique materials and solutions make people's lives better around the world every day.* Fulfilling this role leads to the creation of five types of social value.

### Making Ever-Greater Achievements Possible and Bringing Bolder Ideas to Life

Shareholders, investors, and other stakeholders often say that the AGC Group can be difficult to understand because it operates a wide range of businesses around the world. However, I believe that building a broad business portfolio is essential to our continued evolution and growth as well as to fulfillment of our purpose and creating the five types of social value. Because of the complexity of our operations, we must focus on increasing and improving disclosure. Moreover, I always strive to provide detailed explanations of our operations and plans whenever I can participate in dialogues with stakeholders.

Based on its founding spirit, the AGC Group has supported the leading industries of every era and contributed

to solving social issues by building unshakable relationships of trust with customers and by providing *unique materials and solutions*. Going forward, we will continue to work with our stakeholders to integrate each other's knowledge and advanced technologies, helping to make ever-greater achievements possible, and bringing bolder ideas to life. This proactive mindset and the key aspirations set out in AGC's Group Vision **"Look Beyond"** are encapsulated in the brand statement: *Your Dreams, Our Challenge*. In accordance with this statement, we will enhance corporate value by continuously growing and evolving through *business portfolio transformation* and the *promotion of sustainability management*. As we move forward, I would like to ask for the continued support and understanding of all of our stakeholders.

May 2023

**Yoshinori Hirai**

Representative Director, President & CEO



## A Message from the Chief Financial Officer



### Shinji Miyaji

Representative Director, Senior Executive  
Vice President, CFO, CCO

## Progress Concerning Financial Targets

### Sales at an All-Time High but Profits Edge Down

Our medium-term management plan **AGC plus-2023** covers 2021 through 2023, yet we had largely achieved its four main financial targets only one year after its implementation. Therefore, in February 2022 we undertook a significant upward revision of these targets, raising them to operating profit of ¥230.0 billion, operating profit from Strategic Businesses of ¥80.0 billion, and ROE of 10%.

Thanks to further expansion of Strategic Businesses, higher product selling prices, and yen depreciation, in 2022, the plan's second year, net sales increased ¥338.5 billion year on year, to ¥2,035.9 billion. This figure reached a new high-water mark for the second consecutive year and surpassed ¥2.0 trillion for the first time.

On the other hand, operating profit declined ¥22.2 billion from the previous year, to ¥183.9 billion, due to significantly less demand for displays and price hikes for raw materials and fuel. This lower operating profit coupled with the recognition of ¥128.4 billion in impairment losses resulted in the recognition of loss for the year attributable to owners of the

## We are progressing steadily toward our target business portfolio.

parent of ¥3.2 billion. Nonetheless, operating profit from Strategic Businesses was up ¥17.1 billion year on year, to ¥70.9 billion, reflecting the continued steady expansion of the Electronics and Life Science businesses. As for the final year targets set in February 2022, we are likely to achieve the targets for operating profit from Strategic Businesses and debt-to-equity ratio. However, we do not expect to reach the ROE and consolidated operating profit targets.

### AGC plus-2023 Financial Targets

	FY2021 results	FY2022 results	FY2023 forecasts
Operating profit	¥206.2 billion	¥183.9 billion	¥190.0 billion
ROE	10.2%	—	6.3%*
Operating profit of Strategic Businesses	¥53.8 billion	¥70.9 billion	¥80.0 billion
Debt-to-equity ratio	0.41	0.41	0.5 or lower

#### Reference

	FY2023 targets (Set in February 5, 2021)	FY2023 targets (Set in February 8, 2022)
Operating profit	¥160.0 billion	¥230.0 billion
ROE	8%	10%
Operating profit of Strategic Businesses	¥70.0 billion	¥80.0 billion
Debt-to-equity ratio	0.5 or lower	0.5 or lower

\* Forecast ROE for 2023 is calculated using the figures for profit for the year attributable to owners of the parent as of Dec 31, 2022.

## Basic Strategies and Related Initiatives

### Basic Strategy 1: Pursuing

#### “Organizational Ambidexterity”

#### Advancing Strategic Businesses while Improving the Profitability and Asset Efficiency of Core Businesses

Based on organizational ambidexterity, investing in Strategic Businesses has steadily enhanced their performance. As a result, these businesses are attracting growing attention both inside and outside the AGC Group. For the sustained growth of the AGC Group, the consideration of Core Businesses is important as they support investment in Strategic Businesses.

#### Promoting Structural Reform of the Core Businesses

We have been structurally reforming our Core Businesses, including the Architectural Glass and Automotive businesses. 2021 saw the divestment of our North American architectural glass business, and we disposed of a U.S. soda ash manufacturing and sales company in 2022.

At present, we are in the process of selling an architectural glass, automotive glass, and industrial glass manufacturing and sales company in China. We are also considering disposing of architectural glass and automotive glass businesses in Russia. Moreover, efforts focused on fixed costs are making good progress toward a target to reduce costs by ¥15.0 billion, compared to those of 2019, during the current medium-term management plan.

As a result of these initiatives, the profitability and asset efficiency of the Architectural Glass Business are steadily increasing. Although still facing challenging conditions stemming from prolonged semiconductor shortages, the Automotive Business is expected to improve its operating profit by ¥18.0 billion year on year in 2023 through price revisions and increased shipments.

Meanwhile, issues are again becoming apparent for the Display Business. In 2021, stay-at-home demand during the COVID-19 pandemic increased demand for LCD panel displays. Around the middle of 2022, however, a weakening of this demand caused a rapid deterioration in business conditions. In addition, soaring raw materials and fuel costs in combination with yen depreciation swiftly worsened asset efficiency, necessitating the booking of impairment losses of more than ¥70.0 billion. Going forward, we will withdraw from businesses engaged in manufacturing sizes of glass substrates that have low profitability and instead concentrate management resources on businesses that manufacture highly profitable glass substrates for large panel displays. In conjunction with these efforts, we will implement structural reforms, including the elimination or consolidation of production lines.

#### Expanding Core Business Growth Areas along with Strategic Businesses

Our Core Businesses also operate in promising growth areas. In recent years, the Essential Chemicals Business has been driving the growth of Core Businesses. In Southeast Asia, the earnings of this business have grown markedly due to investments made to increase production capacity and the favorable market conditions. In the region, manufacturing expansion and infrastructure development are advancing rapidly in line with economic development. Also, demand is expected to continue rising for caustic soda, which supports a wide range of manufacturing industries, and for polyvinyl chloride (PVC), which is indispensable for infrastructure development.

Further, the Performance Chemicals Business is gaining importance as a new growth area for Core Businesses. In 2022, shipments of fluorinated products, mainly for semiconductor-related applications, rose significantly and generated sales in excess of ¥150.0 billion. AGC’s main

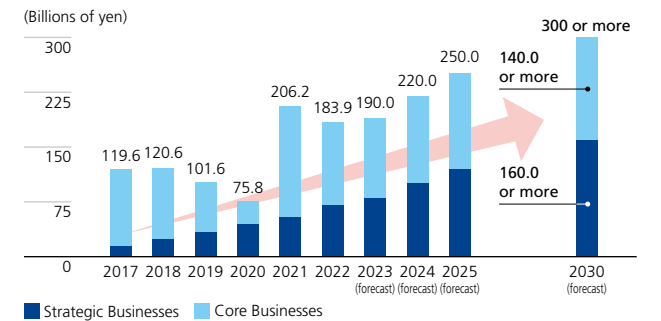
fluorinated product, the fluoropolymer Fluon® ETFE has a wide range of industrial and automotive applications owing to its excellent heat and chemical resistance. In 1972, AGC became the first company\*1 to successfully develop ETFE and boasts a leading stake in the global ETFE market. Against the backdrop of growing worldwide concern about climate change, demand for Low-E double-glazing glass and other types of architectural glass with advanced heat-insulating and heat-shielding properties is growing, particularly in Europe where environmental awareness is high.

The Group will continue expanding Strategic Businesses while structurally reforming Core Businesses and actively investing in their growth areas. In this way, we will achieve stable growth in the operating profit of both types of business.

\*1 AGC estimate on a sales basis

### Business Portfolio Transformation

#### Composition and Trend of Operating Profit



### Basic Strategy 2: Promoting Sustainability Management –

#### Contributing to the Sustainability of the Earth and Society through Business Activities

When announcing the current medium-term management plan, we also set out five types of social value that we want to create. We place particular emphasis on contributing to the realization of a sustainable global environment as we are a member of the materials industry, whose manufacturing

processes generate significant GHG emissions. We are steadily implementing initiatives to lower GHG emissions. In addition to setting *net-zero carbon emissions* by fiscal 2050 as a target and establishing specific measures for its achievement, we fully introduced internal carbon pricing in 2022. Regarding GHG emissions reductions by 2030, we have added a Scope 3 target to existing Scope 1 and Scope 2 targets. Such initiatives and proactive disclosure have been well received by external bodies, with our GHG emissions reduction targets gaining certification from the Science Based Targets initiative (SBTi).

While advancing initiatives to lower GHG emissions and reduce our environmental footprint, we also aim to contribute to *the realization of a sustainable global environment* through our business activities. To this end, we will leverage the advanced technological capabilities that we have developed. For example, the use of the Low-E double-glazing glass that I mentioned earlier improves the heating and cooling efficiency of buildings. Consequently, the GHG emissions reduction benefits of this glass greatly exceed the GHG emissions from its manufacturing processes.

In addition, our Essential Chemicals Business in Southeast Asia contributes significantly to *the realization of a safe and comfortable urban infrastructure* as the business plays an integral role in the development and maintenance of local water supply and sewage systems.

### Basic Strategy 3: *Gaining Competitiveness by Accelerating Digital Transformation*

#### Moving into a New Phase of Digitally Enabled Corporate Transformation

In the private sector, AGC is a digital transformation trailblazer. Our integration of digital technologies into many different work processes is producing tangible results. For example, we are optimizing manufacturing processes by

utilizing vast amounts of data accumulated from manufacturing bases.

In pursuing digital transformation, it is important that digital transformation does not become an end in itself. We have always emphasized that digital technologies are only a tool or a means to an end, while transformation is the goal. Through our efforts to date, the digital tools are now in place. In recognition of the progress we have made, AGC was jointly selected by METI and the Tokyo Stock Exchange as a Digital Transformation (DX) Stock 2022.

Given that we have entered a new phase of corporate transformation, in January 2023 we established the Digital & Innovation Promotion Division to step up the pace of digitally enabled corporate transformation even further.

## Financial Strategy

### Investing in Growth Areas and Increasing Shareholder Returns

At this juncture, let me turn to our capital allocation strategy. Over the period of the current medium-term management plan, we expect to secure approximately ¥1 trillion in investment capital as a result of the strengthening of cash generation capabilities since the previous plan, asset disposal accompanying structural reforms, and a reduction of shares held for strategic purposes. Moreover, in line with a policy of not holding any shares for strategic purposes, we intend to continue reducing these shares.

In terms of the allocation of investment resources, in comparison with the previous plan we will reduce investment in Core Businesses and Groupwide investments by



roughly ¥100.0 billion while increasing investment in Strategic Businesses and other growth areas. Since the previous plan, we have been boosting investment in R&D and human resources. We will continue to focus investment on these areas as they are critical for future growth.

In addition, we intend to increase shareholder returns to more than ¥200.0 billion during the current medium-term management plan. In February 2023, the Board of Directors approved an acquisition of treasury stock totaling ¥50.0 billion. As mentioned above, we recorded significant impairment losses in 2022. However, as impairment losses are not accompanied by cash outflows, the annual dividend for 2022 was set at ¥210 per share, unchanged from that of the previous year.

For 2023, we forecast year on year increases of ¥114.1 billion in net sales, to ¥2,150.0 billion; ¥6.1 billion in operating profit, to ¥190.0 billion; and profit for the year attributable to owners of the parent of ¥87.0 billion. Also, we

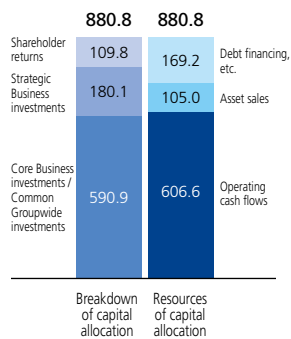


plan to pay an annual dividend of ¥210 per share, unchanged from that of 2022.

### Capital Allocation Policy

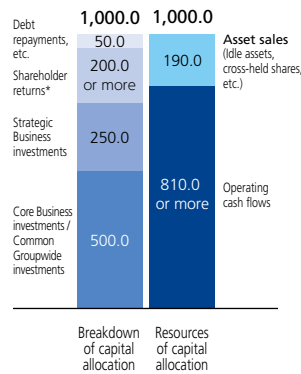
#### Current Medium-Term Management Plan (FY2018–FY2020)

(Billions of yen)



#### Current Medium-Term Management Plan (FY2021–FY2023)

(Billions of yen)



\* Including payment of dividends to non-controlling interests

### Outlook

#### Becoming a Corporate Group with a Stable ROE of 10% or Higher

The long-term management strategy Vision 2030 sets a stable ROE of 10% or higher as a target. ROE is a financial indicator to which I give particular importance as it measures whether a company is generating returns that exceed the expectations of capital markets.

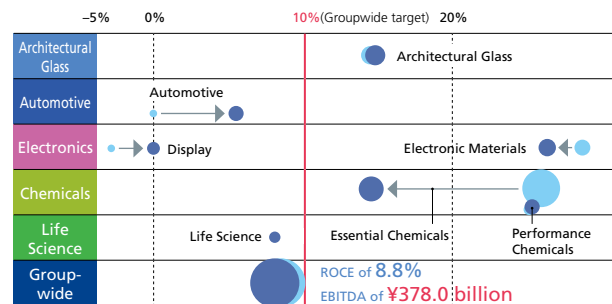
Although ROE surpassed 10% in 2021, average ROE during the period of the current plan is expected to be significantly below 10%. The impairment losses incurred due to a steep decline in demand are a major factor in this expected shortfall. Given the wide variety of businesses in which we are engaged around the world, such factors could affect us again. That is precisely why we must transform our current business portfolio.

To this end, for each in-house company and strategic business unit, we are measuring the asset efficiency by using return on capital employed (ROCE)\*2 and measuring growth by utilizing earnings before interest, taxes, depreciation, and amortization (EBITDA). Based on these financial indicators, we have established targets best suited to each type of business. For businesses in which growth is important, we emphasize increasing EBITDA, while for businesses in which asset efficiency is a priority, we emphasize ROCE.

With 2019 as a benchmark, the current plan initially called for the AGC Group as a whole to lift ROCE from 5.9% to 7.5% and to increase EBITDA by approximately ¥100.0 billion, to ¥344.0 billion, by 2023. In the current year, as shown in the chart below, the ROCE of the Essential Chemicals Business is likely to decline due to softening market conditions. Meanwhile, the Automotive and Display businesses are expected to see significant increases in ROCE. For the AGC Group as a whole, a ROCE of 8.8% and EBITDA of ¥378.0 billion are projected. The AGC Group will aim for ROCE of at least 10%.

\*2 Operating profit divided by operating assets

#### Projected Changes in ROCE of Respective Businesses



ROCE in FY2022 (Actual) ● vs. FY2023 (Target) ●

Notes: 1. Groupwide operating profit is calculated after the allocation of common expenses, whereas operating profit by business is calculated before the allocation of common expenses.  
2. The diameter of each circle above, excluding those on a Groupwide basis, represents the scale of EBITDA of the respective businesses.

### Driving Business Portfolio Transformation by Fostering an Appetite for Challenges

AGC has always focused on developing a corporate culture that encourages ambitious initiatives. However, this culture does not only refer to efforts to open up new fields of business, such as the fields that our Strategic Businesses are developing. By always embracing challenges, each employee of the AGC Group ultimately helps heighten ROE, regardless of whether they work in Core or Strategic Businesses. Accordingly, I view using various forums to inculcate a proactive mindset in all Group employees as an important role of the CFO.

2023 is the final year of the current medium-term management plan. Management plans are not the ultimate destination, but rather should be considered a way to periodically check, and share with stakeholders, progress toward our long-term target profile. Long lead times between the launch of initiatives and their results characterize the materials industry. For this reason, as CFO I must never lose my long-term perspective. Given the extensive scope of our business portfolio, always being fully aware of the big picture is important in my position.

As we progress steadily toward our target business portfolio, I will continue fulfilling my role as CFO to ensure that this progress benefits the coming generations.

## A Message from the Chief Technology Officer

The AGC Group will open the door to a new future by forging ahead with ambitious initiatives based on three technology development strategies.

### Hideyuki Kurata

Representative Director, Executive Vice President, CTO,  
General Manager of the Technology General Division

### Advancing Three Technology Development Strategies to Realize Vision 2030

Aiming to realize the long-term management strategy Vision 2030, the AGC Group is focusing on *business portfolio transformation* and *the promotion of sustainability management*. As part of these efforts, the AGC Group is advancing three technology development strategies: *ambidextrous development*, *open innovation*, and *digital transformation*. By promoting and pursuing these strategies, we will continue to create social and economic value.

#### *Ambidextrous Development*

"Organizational Ambidexterity"\*<sup>1</sup> is an approach whereby a single organization simultaneously evolves existing businesses

and explores new business opportunities. *Pursuing "organizational ambidexterity"* is set out as a key strategy in the medium-term management plan **AGC plus-2023**. We have named the technology development strategy based on this management approach "*ambidextrous development*."

\*1 Organizational ambidexterity refers to the ability of an organization to explore new technologies and markets while exploiting mature ones. This concept has been proposed by Professor Charles A. O'Reilly of Stanford University's Graduate School of Business in the United States, and other experts.

"Right-handed" development consists of two activities: innovating existing production technologies and basic technologies, and partnering with customers in the development of new products. This type of development corresponds to the "exploitation" aspect of organizational ambidexterity, which involves to the exploitation of mature technologies and markets. Meanwhile, "left-handed" development involves utilizing and redefining existing proprietary technologies to develop new markets. This type of development is related to



the “exploration” aspect of organizational ambidexterity, which entails the exploration of new technologies and markets. Since development resources are finite, balancing their allocation between these two types of development is the key to achieving *business portfolio transformation*. In the past several years, we have focused on left-handed development by allocating more resources and personnel to Strategic Businesses. However, as Core Businesses are earnings mainstays, we must not neglect right-handed development. Further, both right-handed and left-handed approaches are required to develop the GHG emissions reduction, recycling, and energy-saving technologies that facilitate the AGC Group’s *promotion of sustainability management*.

Since the launch of the current medium-term management plan, we have been identifying and classifying development themes into three categories—those to begin, those to

discontinue, and those to continue—bearing in mind the AGC Groupwide goals of *business portfolio transformation* and *promotion of sustainability management*. To classify development themes, we have adopted discovery-driven planning.\*<sup>2</sup> I believe these classification efforts are bringing us closer to an optimal balance between right-handed and left-handed development.

\*<sup>2</sup> Discovery-driven planning is suited to the uncertainties of innovation-oriented projects. This type of planning differs from conventional planning because the former assumes that plan parameters may change as new information emerges, while the latter assesses the correctness of a plan based on the extent to which outcomes correspond to projections.

### Open Innovation

We use open innovation as a strategy for producing concrete results from current development themes. The increasing complexity and urgency of social issues is making co-creation with external partners ever more important.

With this in mind, we established the AGC Open Square (AO) as a collaborative space within the AGC Yokohama Technical Center (YTC) in 2020. Even though it was launched during the COVID-19 pandemic, AO welcomed many visitors, including personnel from client companies as well as researchers from universities and research institutions. In 2022 alone, the representatives of more than 500 organizations visited AO. The YTC has many exhibits that allow visitors to experience firsthand the AGC Group’s wide range of proprietary technologies. At AO, visitors can also try out their ideas while

having lively discussions with AGC Group engineers. We aim for AO to play an increasingly central role in accelerating our co-creation efforts.

Further, in countries worldwide, industry and academia collaboratively held various events commemorating the declaration of 2022 as the United Nations International Year of Glass. The AGC Group also contributed to the success of the events by setting up an exhibit in the YTC to celebrate the International Year of Glass.\*<sup>3</sup>

We are also advancing open innovation through industry-academia tie-ups, which include joint research with the University of Tokyo, Tokyo Institute of Technology, and Nagoya University. These joint research efforts are focusing on innovation that will help accelerate left-handed development and thereby facilitate the creation of new businesses. Our other innovation initiatives include Global Technology Networking (GTNET) activities, which gather information on markets and conduct technology scouting globally through dedicated bases established in Japan, the United States, Europe, Singapore, and China.

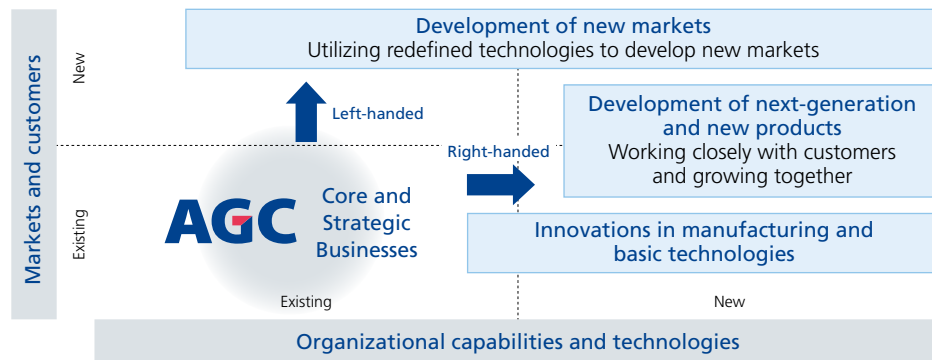
\*<sup>3</sup> Based on a letter of support endorsed by 80 countries including Japan, in 2021 the United Nations General Assembly passed a resolution designating 2022 the United Nations International Year of Glass.

### Digital Transformation

Our third technology development strategy is to leverage digital transformation. The AGC Group has long been an industry pioneer in digitalization and has reached the stage where digital transformation is beginning to create new value. Specifically, we have laid foundations to create this new value by focusing efforts on accumulating vast amounts of data related to production and technology development, while also cultivating dual skilled personnel who possess both

### Ambidextrous Development

- **Right-handed development:** Innovating manufacturing and basic technologies to develop new products together with customers
- **Left-handed development:** Redefining proprietary technologies and developing new markets



operational know-how and digital technology skills. Further, we are incorporating AI into technology simulations and other development processes in earnest, and these efforts are beginning to produce results. In January 2023, the Digital & Innovation Promotion Division was established as a division directly under the chief technology officer (CTO). In creating this new division, we merged the DX Promotion and Productivity Innovation divisions with part of the Soft Science Team of the Innovative Technology Laboratories. The new division will drive corporate transformation by tackling digital transformation based on a comprehensive view of all business processes, including technology development, production bases, supply chains, and back-office operations.

## Continuing to Create New Value by Exploiting AGC's Strengths

Although right-handed and left-handed development are different approaches, they are both means of creating new value by exploiting AGC's strengths. In creating new value, we must continue taking on ambitious initiatives ourselves. For this reason, as CTO my policy for 2023 is to instill an appetite for challenge in employees. The AGC Group's founding spirit is expressed by the motto "Never take the easy way out, but confront difficulties." When we are unable to find a solution to a problem, giving up is easy. However, I am urging employees to persevere with difficult tasks. At the outset of projects, I want employees to have the courage to try things rather than list the reasons why certain goals cannot be achieved. I have adopted this as my policy because I have often seen people ultimately find solutions after expending effort to grapple with tough tasks. While utilizing open innovation, digital transformation,

and other tools, we are sure to create new value based on these themes so long as each of us, including myself, continues to take on challenges with unflinching determination.

## Converting Intellectual Property into Social and Economic Value

Intellectual property strategy plays a critical role in ensuring that stakeholders benefit from the value created through the pursuit of our three technology development strategies. Annually, the AGC Group invests over ¥50.0 billion in R&D. We must secure and protect the results of this investment as intellectual property and convert them into social and economic value. To this end, we have established the Intellectual Property Award System for Inventors, which takes into account the positive effects of intellectual property on society and our business performance. In addition, since the AGC Group is engaged in businesses globally, standardization is also important in its intellectual property strategy. Therefore, we have established a dedicated organization for strategy standardization within the Intellectual Property Division. This organization steadily advances initiatives in collaboration with industry associations and standardization bodies. Further, to make the best use of the intellectual property that we have secured, we are focusing on the training of engineers with expertise in this area.

## Reinforcing Comprehensive Strengths on a Cross-Divisional, Global Basis

In addition to AGC's Technology General Division and Intellectual Property Division, the CTO has jurisdiction over Groupwide divisions, namely, the Environment, Occupational Health & Safety and Quality (EHSQ) General Division, the Business Development Division, and the Digital & Innovation Promotion Division. The AGC Group has an in-house company system, with each in-house company having its own technology development department and EHSQ department. The role of the corporate divisions is to reinforce the AGC Group's comprehensive strengths by enabling cross-divisional initiatives on a global basis. For example, in advancing the EHSQ initiatives, the operating sites of each in-house



company serve as a first line of defense. At the same time, the EHSQ General Division provides a second line of defense. In this capacity, it strengthened its global support for EHSQ initiatives by establishing a European EHSQ organization (Europe, Middle East, Africa, South America Regional EHSQ Office) in 2022. To ensure safety—a basic premise of business activities—raising awareness throughout the AGC Group is important. Accordingly, on a global level the AGC Group is stepping up activities aimed at further developing its safety culture and thereby eliminating serious accidents. With “Bad News First” as a slogan, the AGC Group is fostering a culture in which problems are not concealed but shared promptly and nipped in the bud before they escalate. Amid a growing global awareness of the dangers posed by climate change, the EHSQ General Division also plays a central role in the AGC Group’s systematic efforts to reduce GHG emissions,

and the AGC Group is making steady progress toward achieving *net-zero carbon emissions* by fiscal 2050. Reflecting favorable assessments of our progressive initiatives and proactive disclosure, in 2022 we were certified as an “A List company” by the CDP, an international non-profit organization that addresses such environmental issues as climate change. In addition, the AGC Group has submitted its GHG emissions reduction targets to the Science Based Targets initiative (SBTi) and received WB2°C (well-below 2°C) certification from the SBTi.

Strengthening the cross-divisional capabilities of the corporate divisions requires even greater coordination among the divisions and in-house companies. In particular, three-way collaboration among the Technology General Division, the Business Development Division, and the technology development divisions of each in-house company is vital for the realization of *ambidextrous development*. For example, the right-handed development themes handled by the Technology General Division call for close cooperation with in-house companies’ technology development divisions as they are in direct contact with customers. Similarly, to advance left-handed development themes, the Technology General Division must partner with the Business Development Division, which provides invaluable insights into the creation of future businesses. Over the past few years, we have increased personnel exchanges and transfers between corporate divisions and the technology development divisions of in-house companies. I feel that these exchanges are encouraging even greater collaboration among

divisions, including the allocation of roles to divisions based on shared schedules for technology development. We will continue building in-house relationships that engender mutual trust and enable joint initiatives focused on ambitious goals.

## Creating a Flat Organization Comprised of Independent Individuals with Shared Goals

As the AGC Group has an extensive range of business domains and technologies, shared goals have to be established. Doing so gives employees a sense of purpose and empowers them to act autonomously and take on challenges. Going forward, I will continue engaging in employee dialogues with the aim of creating an organization where everyone works positively and has a real sense of personal growth.

To this end, the non-hierarchical culture that the AGC Group has fostered needs to be emphasized even more. In particular, we will actively promote the principles of diversity, equity, and inclusion. Just as innovation is created when different technologies meet, encounters between different individuals drives the creation of new value. When we are tenaciously pursuing ambitious goals, new encounters can turn difficulties into opportunities. With this in mind, we must become an organization where a workplace lacking diversity feels unusual to employees. This will not be an easy task. Nonetheless, keeping in mind AGC’s *Your Dreams, Our Challenge* brand statement and always embracing challenges, I will work together with all AGC Group employees to open the door to a new future.



## AGC's Group Vision

# “Look Beyond”

“**Look Beyond**” is the AGC Group’s corporate philosophy underpinning all of its business and social activities. When embarking on integrated global management in April 2002, the Group formulated this vision to ensure that its employees around the world would continue to evolve as one.

“**Look Beyond**” calls for the following mindset.

“**Look Beyond**” Anticipate and envision the future,

“**Look Beyond**” Have perspectives beyond our own fields of expertise, and

“**Look Beyond**” Pursue innovations, not becoming complacent with the status quo.

By realizing its burgeoning potential, the entire Group will continue providing the world with value.

The structure and three elements of “**Look Beyond**”

### Our Mission

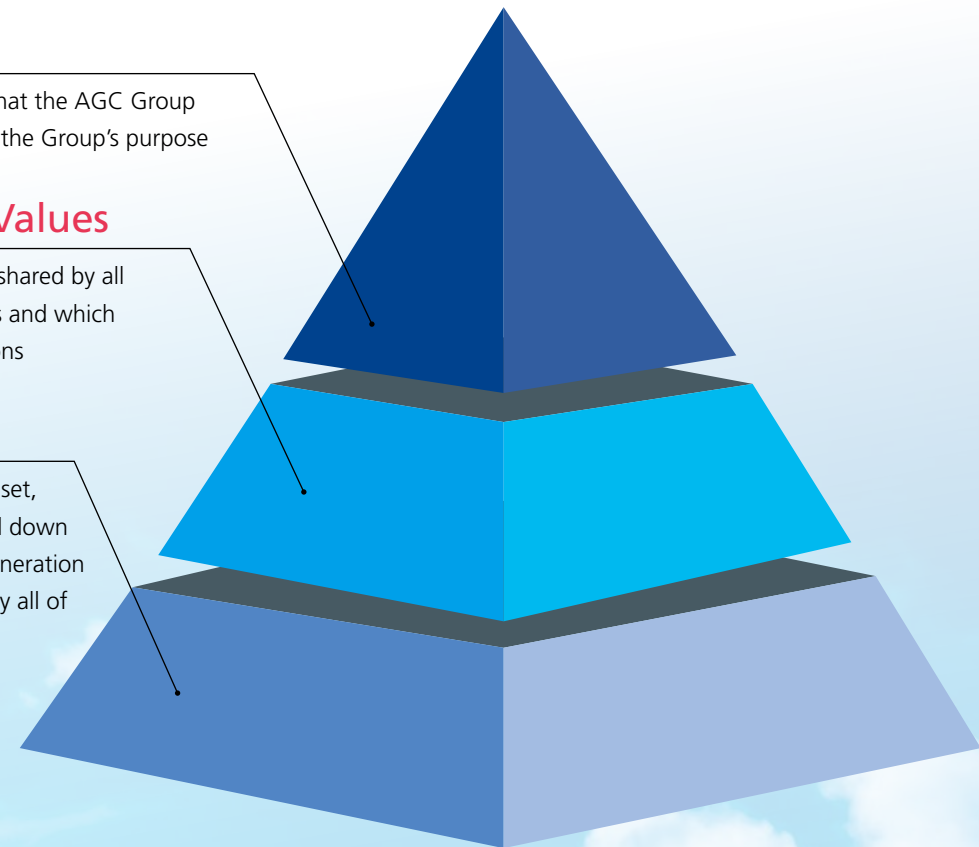
Setting out the value that the AGC Group should offer as well as the Group’s purpose

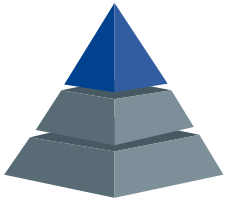
### Our Shared Values

The key ideas that are shared by all AGC Group employees and which inform all of their actions

### Our Spirit

Our fundamental mindset, which has been passed down from generation to generation and put into practice by all of our employees

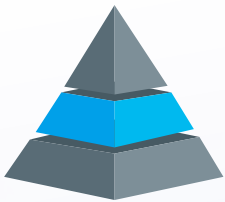




## Our Mission **AGC, an Everyday Essential Part of Our World**

**AGC's unique materials and solutions make people's lives better around the world every day.**

We, the AGC Group, aim to continue being the "first choice" solution provider for our customers by building long-term, trust-based relationships with them through unique materials and solutions developed using our wide-ranging material and production technologies. We will continue offering products and solutions that customers and society need, thereby making people's lives better around the world every day.



## Our Shared Values **Innovation & Operational Excellence, Diversity, Environment, Integrity**

### Innovation & Operational Excellence

- We will seek innovations in technology, products, and services beyond conventional concepts and frameworks.
- We will create value directed at our current and potential customer needs, accounting for changes in the business environment and social and market evolution.
- We will continuously improve all aspects of our operations, striving to achieve benchmark performance.

### Diversity

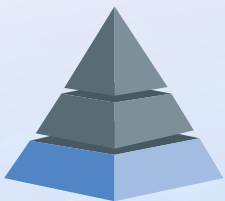
- We will respect the diversity of individuals of varied capabilities and personalities.
- We will respect cultural diversity in terms of race, ethnicity, religion, language, and nationality.
- We will respect different perspectives and opinions at all times.

### Environment

- We will contribute to the creation of a sustainable society in harmony with nature as successful and responsible global citizens.
- We will strive to ensure and further improve occupational health and safety in our working environment.

### Integrity

- We will build open and fair relationships with all of our stakeholders based on the highest ethical standards.
- We will comply with all applicable laws and regulations.
- We will fulfill our contractual and legal responsibilities to achieve customer satisfaction and trust.



## Our Spirit **"Never take the easy way out, but confront difficulties."**

Toshiya Iwasaki, who founded Asahi Glass Company in 1907, summed up his mindset in those early days with the motto, "Never take the easy way out, but confront difficulties." Much in evidence when our predecessors subsequently took on the ambitious goal of manufacturing flat glass domestically, this mindset has been passed down through the generations to the present day and remains the driver of all of our business activities.



# The AGC Group's Value Creation Model

In accordance with its vision, **“Look Beyond,”** the AGC Group conducts business management from a long-term perspective. Utilizing the five strengths cultivated since our founding, we continuously create economic and social value, help make ever-greater achievements possible, and bring bolder ideas to life by working with others to combine knowledge and advanced technology, and by implementing measures based on the AGC Social Issue Resolution Cycle.

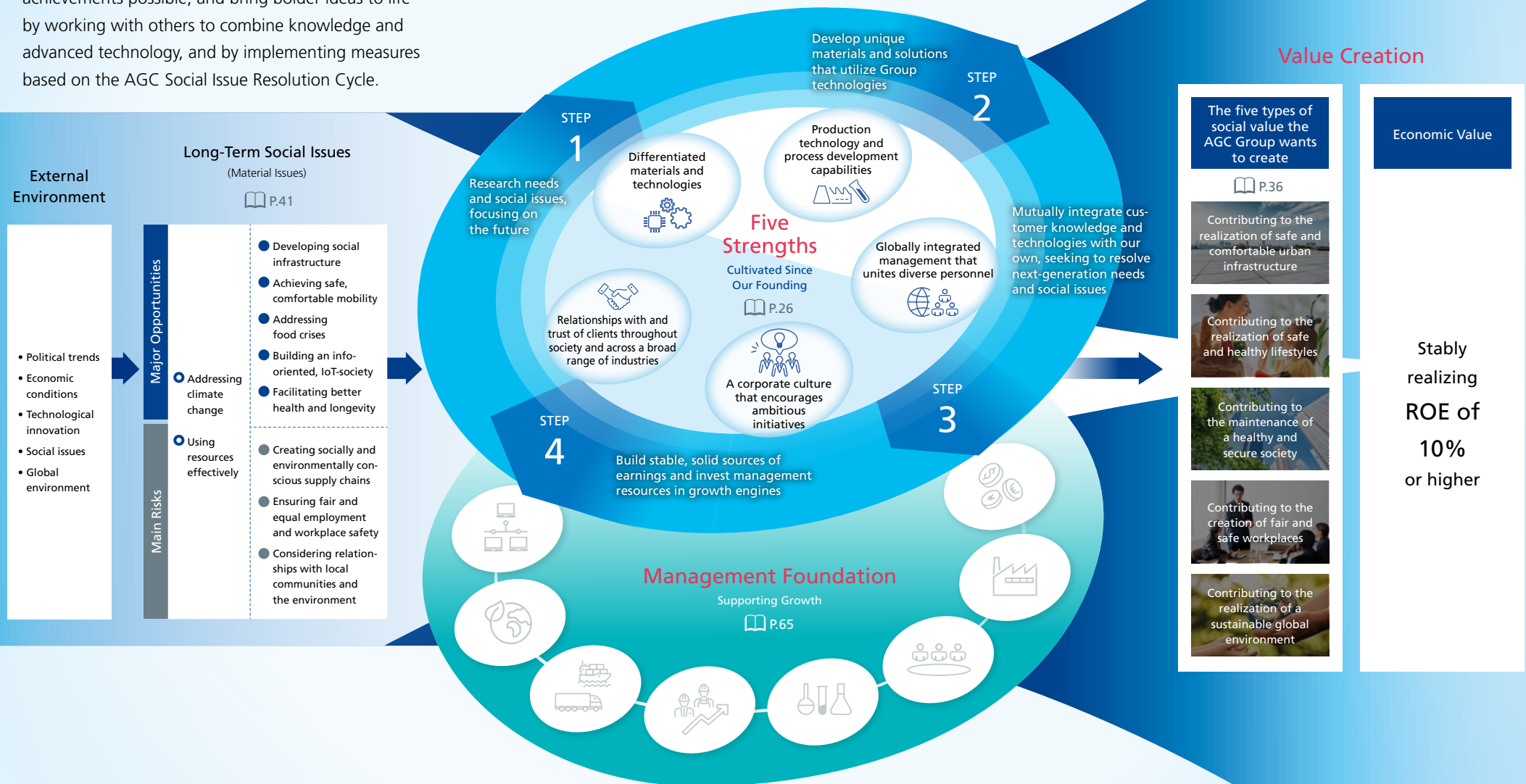
AGC's Group Vision

## “Look Beyond”

The phrase encapsulates the mindset underpinning all of our business and social activities. We always anticipate and envision the future, have perspectives beyond our own fields of expertise, and pursue innovations without being satisfied with the status quo.

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### The AGC Social Issue Resolution Cycle













# The History of Our Strengths

In its more than 110 years of history, the AGC Group has adapted to changes in society by partnering with customers to take on ambitious technological innovations and by foraying into new business fields and regions. The strengths we have cultivated through this history are *relationships with and the trust of clients throughout society and across a broad range of industries, differentiated materials and technologies, production technology and process development capabilities, globally integrated management that unites diverse personnel, and a corporate culture that encourages ambitious initiatives*. This section traces the lineages of these strengths.

For information on the value the AGC Group has provided in each era and its ambitions for the future, please visit the website below.

<https://www.agc.com/en/company/history/index.html>

- Glass
- Automotive
- Electronics
- Chemicals
- Life Science
- Ceramics

Year	Social Developments	Lineages of Our Products and Technologies	Lineage of Our Globalization
1900	<p><b>Rapid construction of a modern nation</b></p>  <p><b>Architectural Glass</b> Amid a construction boom, AGC became the first company in Japan to successfully manufacture flat glass domestically, thereby supporting Japan's rapid transformation and modernization.</p> 	<p><b>1909</b> Began the first mass production of flat glass in Japan, using a Belgian technology based on hand-blown cylinders</p>	<p><b>1907</b> Established Asahi Glass Company (now AGC Inc.) in Amagasaki, Hyogo Prefecture, Japan</p>
1950	<p><b>Advent of the television age</b></p>  <p><b>Glass Bulbs for Television Cathode-Ray Tubes</b> By enhancing product performance and increasing production capacity, we helped advance video technology as well as popularize black-and-white and color televisions.</p> 	<p><b>1916</b> Commenced in-house production of refractory bricks for glass furnaces</p> <p><b>1917</b> Started in-house production of soda ash, a key raw material for flat glass, in Kitakyushu, Japan</p> <p><b>1928</b> Commenced use of the Fourcault process to produce flat glass</p> <p><b>1933</b> Began use of the ammonia method to produce caustic soda</p> <p><b>1938</b> Began production of tempered glass and laminated glass</p> <p><b>1939</b> Began production of refractory bricks at the Iho Plant in Japan</p> <p><b>1954</b> Started production of PairGlass™ double-glazing units</p> <p><b>1955</b> Began production of glass bulbs for television cathode-ray tubes</p>	<p><b>1914</b> Exported flat glass to the United Kingdom for the first time</p> <p><b>1925</b> Established Shoko Glass Co., Ltd., in China</p> <p><b>1952</b> Concluded an agreement for the export of caustic soda electrolysis equipment to Indonesia</p>
1960	<p><b>Advancement of motorization</b></p>  <p><b>Automotive Glass Business</b> AGC responded to burgeoning demand for automobiles by establishing a mass production system for automotive glass and developing production technologies.</p> 	<p><b>1956</b> Launched the automotive glass business in earnest to meet rapidly growing demand</p> <p><b>1960s</b> Began full-scale production of monolithic refractories</p> <p><b>1961</b> Started production of propylene oxide and propylene glycol</p> <p><b>1966</b> Began utilization of the float method, a new technology, to produce large, flat sheets of glass (float glass) Commenced sales of heat-reflective glass in Japan</p> <p><b>1970s</b> Began development of automotive glass antennas</p>	<p><b>1956</b> Founded a glass manufacturing subsidiary in India, thereby developing overseas businesses ahead of other Japanese companies</p> <p><b>1964</b> Entered the flat glass market in Thailand</p>
1970	<p><b>Development of social infrastructure</b></p>  <p><b>Development of the FLEMION™ Ion-Exchange Membrane Electrolysis Method for Caustic Soda Production</b> The FLEMION™ ion-exchange membrane electrolysis method does not use harmful substances and achieves significant energy savings. We have not only introduced this technology to in-house businesses but also offered it to peers who are taking steps to prevent environmental pollution.</p> 	<p><b>1972</b> Developed AsahiGuard™ water and oil repellent fluorinated resins</p> <p><b>1975</b> Developed the FLEMION™ fluoropolymer ion-exchange membrane electrolysis method for manufacturing caustic soda</p>	<p><b>1972</b> Began flat glass operations in Indonesia</p>

1980

Global warming

**Alternative Fluorocarbon Asahiklin AK-225**

As fluorocarbon regulations became stricter, Asahiklin AK-225 attracted attention as the world's first alternative fluorocarbon. This product received the 1994 U.S. Environmental Protection Agency Stratospheric Ozone Protection Award.

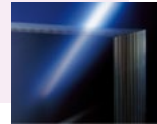


1990

Development of IT

**Glass for TFT-LCDs**

In catering to the rapid growth in demand for flat-screen televisions since 2000, AGC has improved production technologies and established a mass production system for thin-film transistor (TFT) liquid crystal display (LCD) glass.



2000

Spread of LCD TV

**Dragontrail™ Glass for Smartphones and Tablet Computers**

Created through the integrated application of multiple technologies, our chemically tempered special glass Dragontrail™ is used for smartphones, tablet computers, and car-mounted displays and makes day-to-day life more comfortable and convenient.



2010

Popularization of smartphones

**Biopharmaceutical Contract Manufacturing**

Having pioneered the contract manufacturing of the active ingredients and intermediates of small-molecule synthetic pharmaceuticals and agrochemicals, AGC has also launched a similar business model for biopharmaceuticals. Through these products, we are helping realize a healthy, long-lived society.



Development of biomedicine

**EUV Lithography Photomask Blanks**

AGC is contributing to the miniaturization of semiconductor circuit patterns as the world's only manufacturer of EUV lithography photomask blanks with a lineup of vertically integrated technologies that extends from glass materials technologies through to polishing and film deposition technologies.



2020

Advent of the IoT era



1980s Began production of a glass delay line for VHS deck playback

1980s Began the contract manufacturing of fluorine-containing pharmaceutical intermediates

1980 Commenced sales of insulating glass in Japan

1980 Developed a new ion-exchange membrane electrolyzer, the AZEC System

1982 Commenced production of LUMIFLON™ fluoropolymer resin for coatings

1982 Developed the high-quality fused cast refractory ZB-X950

1985 Started production of synthetic fused silica glass

1988 Began sales of Low-E insulating double-glazing glass in Japan

1990 Developed CYTOP™ transparent amorphous fluoropolymer

1991 Started production of alternative fluorocarbon Asahiklin AK-225

1992 Started production of glass filters that absorb infrared rays in cameras

1995 Began production of glass substrates for TFT-LCDs

1997 Commenced production of glass for DVD/CD optical pickups

2000 Began contract manufacturing of biopharmaceuticals

2003 Began production of CMP slurry for semiconductors  
Participated in a consortium for photomask blanks for EUV lithography

2005 Began sales of automotive door glass that blocks infrared rays

2008 Saw the use of high-performance Fluon® ETFE FILM for international sports venues in Beijing

2011 Began sales of UV Verre Premium Cool on™ tempered glass for automotive doors

2011 Began worldwide sales of Dragontrail™ glass for smartphones and tablet computers

2013 Commenced production of cover glass for car-mounted displays

2014 Began sales of smart-glazing glass Wonderlite™

2015 Initiated sales of UV Verre Premium Privashield™ automotive glass that cuts 99% of UV rays in all directions

2015 Began the supply of HFO-1234yf, a next-generation automotive refrigerant, with a low environmental burden

2017 Commenced production of photomask blanks for EUV lithography

2017 Acquired leading biopharmaceutical CDMO CMC Biologics

2019 Entered the extremely low-loss copper-clad laminates business by acquiring certain businesses from the U.S. companies Park Electrochemical Corp. and Taconic

2020 Acquired Molecular Medicine S.p.A. of Italy and began a CDMO business in the field of gene and cell therapy

2022 Launched sales of Low-Carbon Glass at AGC Glass Europe

1981 Acquired Glaverbel S.A. of Belgium and entered Europe's flat glass market in earnest

1985 Entered the automotive glass business in the United States in earnest

1986 Entered the chlor-alkali business in Indonesia in earnest

1997 Entered Russia's flat glass market

2000 Established a site for the production of LCD glass substrates in Taiwan

2005 Established a site for the production of LCD glass substrates in South Korea

2007 Marked centennial by making "AGC" the Group's unified brand

2010 Established in China the AGC Group Regional Headquarters for China

2011 Established a site for the production of LCD glass substrates in China

2013 Entered Brazil's flat glass market  
Established the AGC Group Regional Headquarters for Southeast Asia & Oceania in Singapore2016 Founded bases for information gathering and market research and analysis in India and Dubai  
Established an automotive glass production site in Morocco

2017 Acquired Vinythai Public Co., Ltd., of Thailand

2018 Consolidated bioscience businesses in Japan, the United States, and Europe and began integrated operations under AGC Biologics S.p.A.  
Changed corporate name to AGC Inc.

2019 Built a tripolar system for the development of automotive glass antennas

2021 Transferred the Architectural Glass Business in North America

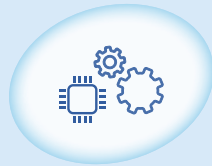
2022 Began considering disposal of architectural and automotive glass business in Russia

## Five Strengths Cultivated Since Our Founding



### Relationships with and trust of clients throughout society and across a broad range of industries

Since our founding, we have extended our business domain to include an increasingly broad range of industries. Furthermore, we have used the contacts made in these industries to continuously create new applications that match market priorities. In this way, we have built unshakable relationships of trust with our customers. Going forward, we will use these relationships to realize collaboration with the leaders of each industry, thereby providing new value.



### Differentiated materials and technologies

By always taking a long-term view of the likely changes in society, markets, and technologies and by developing materials and technologies in anticipation of customer needs, the AGC Group has been able to resolve customers' product issues and create new value. Thanks to this approach and the wide availability of our materials and technologies, customers continue looking to us for solutions—enabling us to create even more value.



### Production technology and process development capabilities

In all of our businesses, we place importance on developing production technologies and facilities in conjunction with product development. With production technology and engineering capabilities honed over many years serving as a base, we will accelerate digital transformation to improve our production capabilities even further.



### Globally integrated management that unites diverse personnel

Since our earliest days, we have proactively expanded businesses overseas. In tandem with these efforts, we have garnered capabilities for globally integrated management. Furthermore, the international character of our businesses has created a corporate culture of “cross-fertilization” in which self-confident personnel intermingle, and this culture has become a source of competitive strength. By preserving our corporate culture as the foundation of value creation, we will continue to further evolve globally integrated management.



### A corporate culture that encourages ambitious initiatives

An openness that allows many different personnel to take on challenges without fearing failure is central to our founding spirit. Having become deeply rooted in our corporate culture, this openness has driven the growth of our organization and businesses. All employees of the AGC Group will drive its sustained growth by inheriting and preserving a corporate culture that encourages ambitious initiatives.

## Creating Social Value through Products

With businesses in an extensive range of fields, the AGC Group supports the daily lives of people worldwide in a variety of ways. From among the five types of social value the AGC Group wants to create through its array of products, this section highlights initiatives aimed at contributing to the realization of a sustainable global environment, contributing to the realization of safe and comfortable urban infrastructure, and contributing to the realization of safe and healthy lifestyles.

### Social Value the AGC Group Wants to Create



Contributing to the realization a sustainable global environment



Contributing to the realization of safe and comfortable urban infrastructure



Contributing to the realization of safe and healthy lifestyles



For information on the AGC Group's products, please visit the website below.

<https://www.agc.com/en/products/index.html>

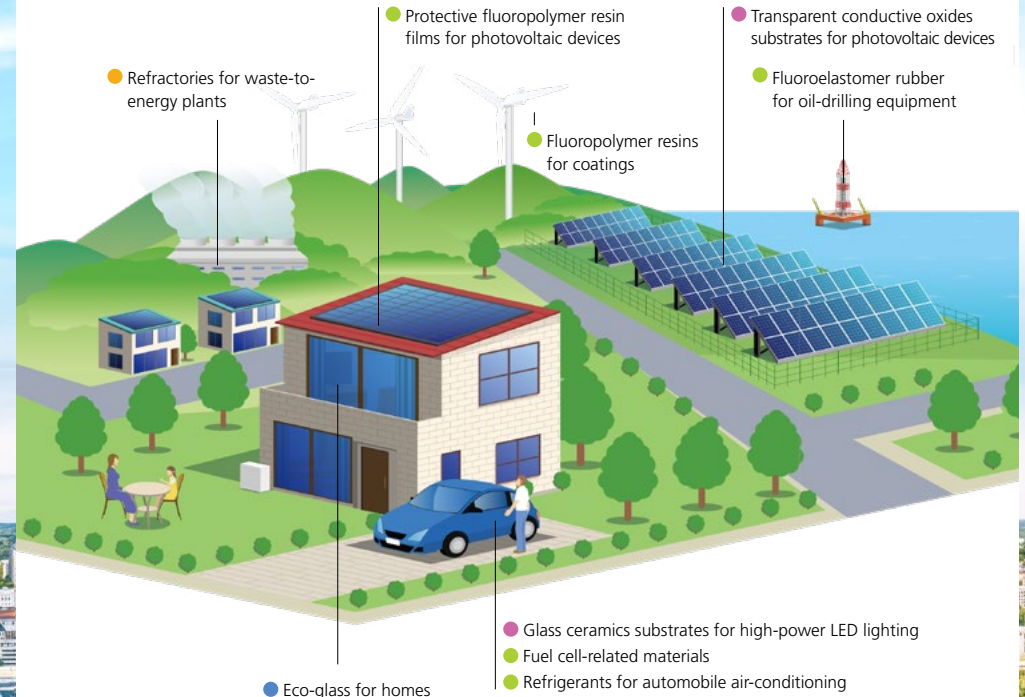
## Contributing to the realization of a sustainable global environment



- Architectural Glass
- Automotive
- Electronics
- Chemicals
- Life Science
- Ceramics and other businesses

### The Environmental Field

Our products that help create environment-friendly smart cities include glass for buildings and homes, solar power generation mirror glass, and green refrigerants.



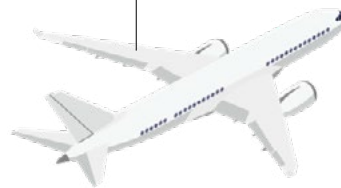
# Contributing to the realization of safe and comfortable urban infrastructure



- Architectural Glass
- Automotive
- Electronics
- Chemicals
- Life Science
- Ceramics and other businesses

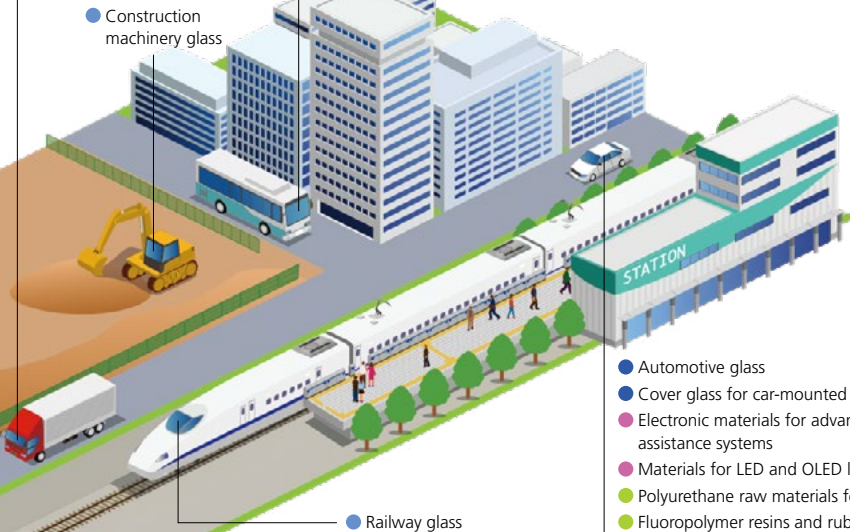
## The Mobility Field

We provide a host of different products that are essential to transportation equipment and which contribute to the realization of next-generation mobility that is safe and comfortable, including lightweight, high-performance window glass and cover glass for car-mounted displays.



- Fluoropolymer resins for coatings
- Fluoropolymer resins for components

- Truck glass
- Refrigerants for automobile air-conditioning
- Bus glass



- Construction machinery glass

- Automotive glass
- Cover glass for car-mounted displays
- Electronic materials for advanced driver-assistance systems
- Materials for LED and OLED lighting
- Polyurethane raw materials for car seats
- Fluoropolymer resins and rubber for automotive components

- Railway glass

- Copper-clad laminates for base stations
- Display-integrated mirrors

- Fluoropolymer resins for coatings

- Photovoltaic glass for buildings
- Glass for office buildings
- Glass antennas for base stations
- Anti-reflective architectural glass

- Fluoropolymer films for membrane structures

- Materials for LED and OLED lighting

- Laminated safety glass for public facilities

## The Architectural and Social Infrastructure Fields

We offer architectural materials that help create reassuring, safe, and comfortable spaces as well as industrial materials that underpin social infrastructure.



- Sodium hypochlorite disinfectant for drinking water
- Polyvinyl chloride for water pipes



- Glass substrates for displays
- Glass materials and components for optical equipment

- Glass substrates for displays
- Cover glass for electronic devices
- Glass materials and components for optical equipment
- Fluoropolymer resins for electronic substrate materials

## The Electronics Field

We supply materials and components for displays and electronic equipment used in a variety of business situations as well as materials and components for semiconductors and communications equipment—these will be indispensable in the coming Internet of Things (IoT) and AI era as well as essential for the practical realization of 5G.

- Glass substrates for displays
- Glass materials and components for storage devices
- Fluoropolymer resins for electronic substrate materials
- Optical materials and components for digital cameras

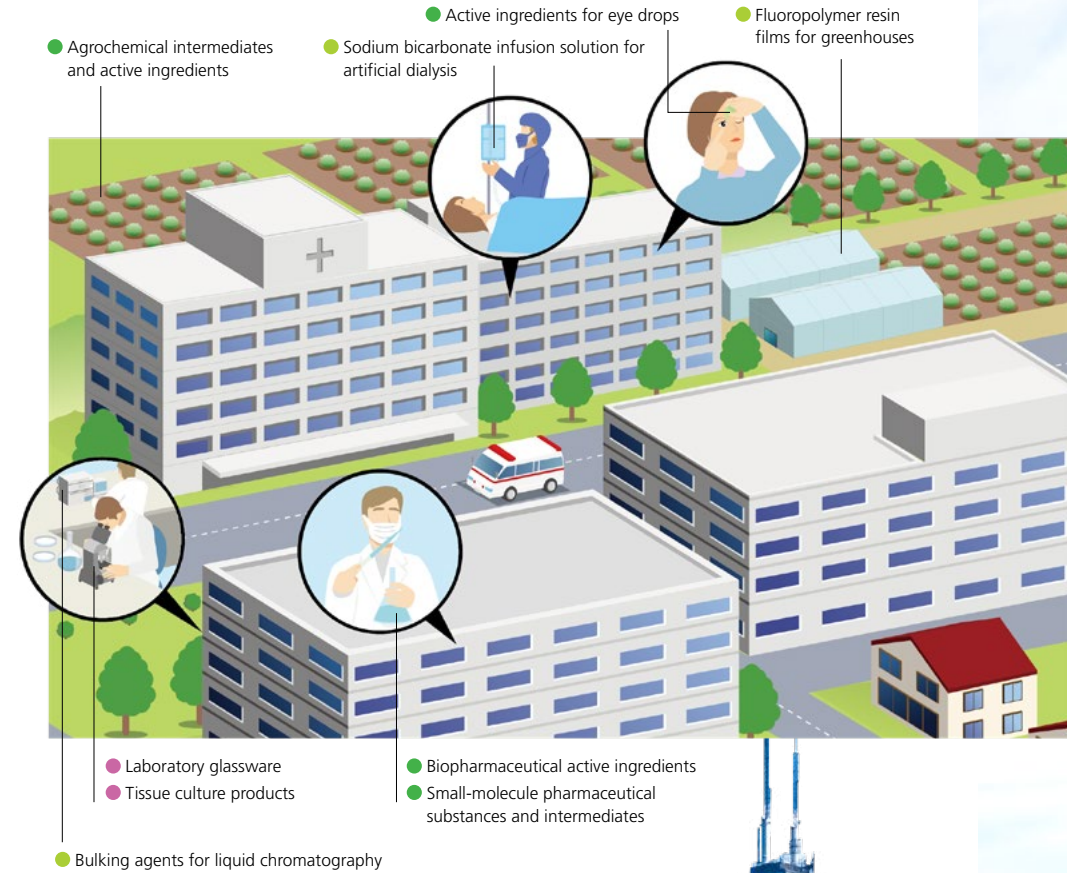
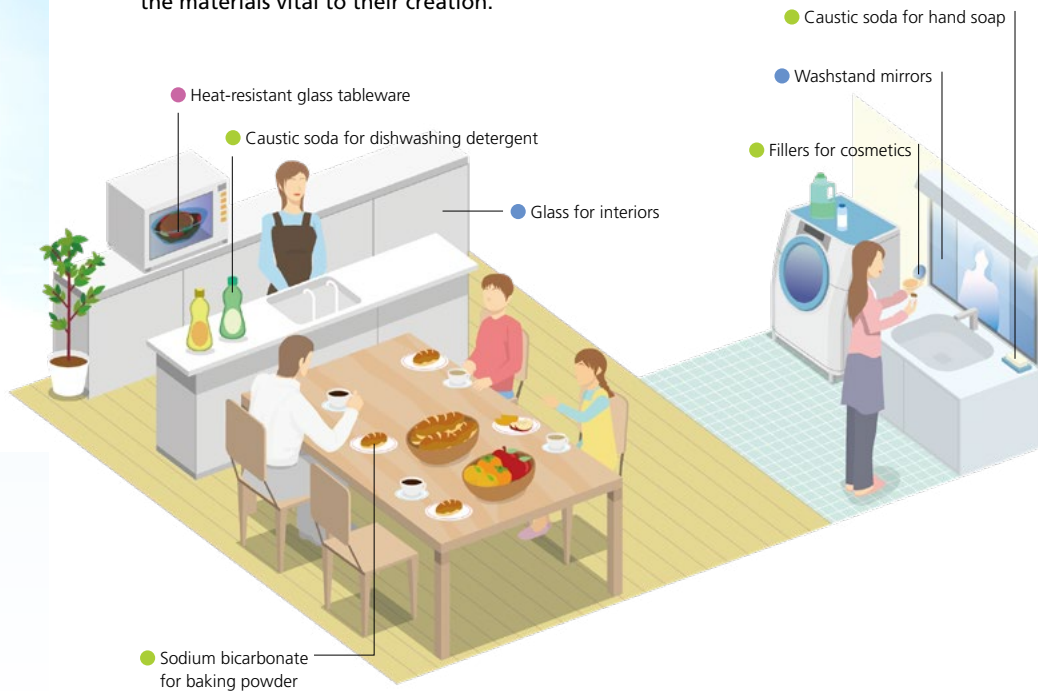
# Contributing to the realization of safe and healthy lifestyles



- Architectural Glass
- Automotive
- Electronics
- Chemicals
- Life Science
- Ceramics and other businesses

## The Consumer Products Field

We market products that bring comfort and convenience to daily life as well as many of the materials vital to their creation.



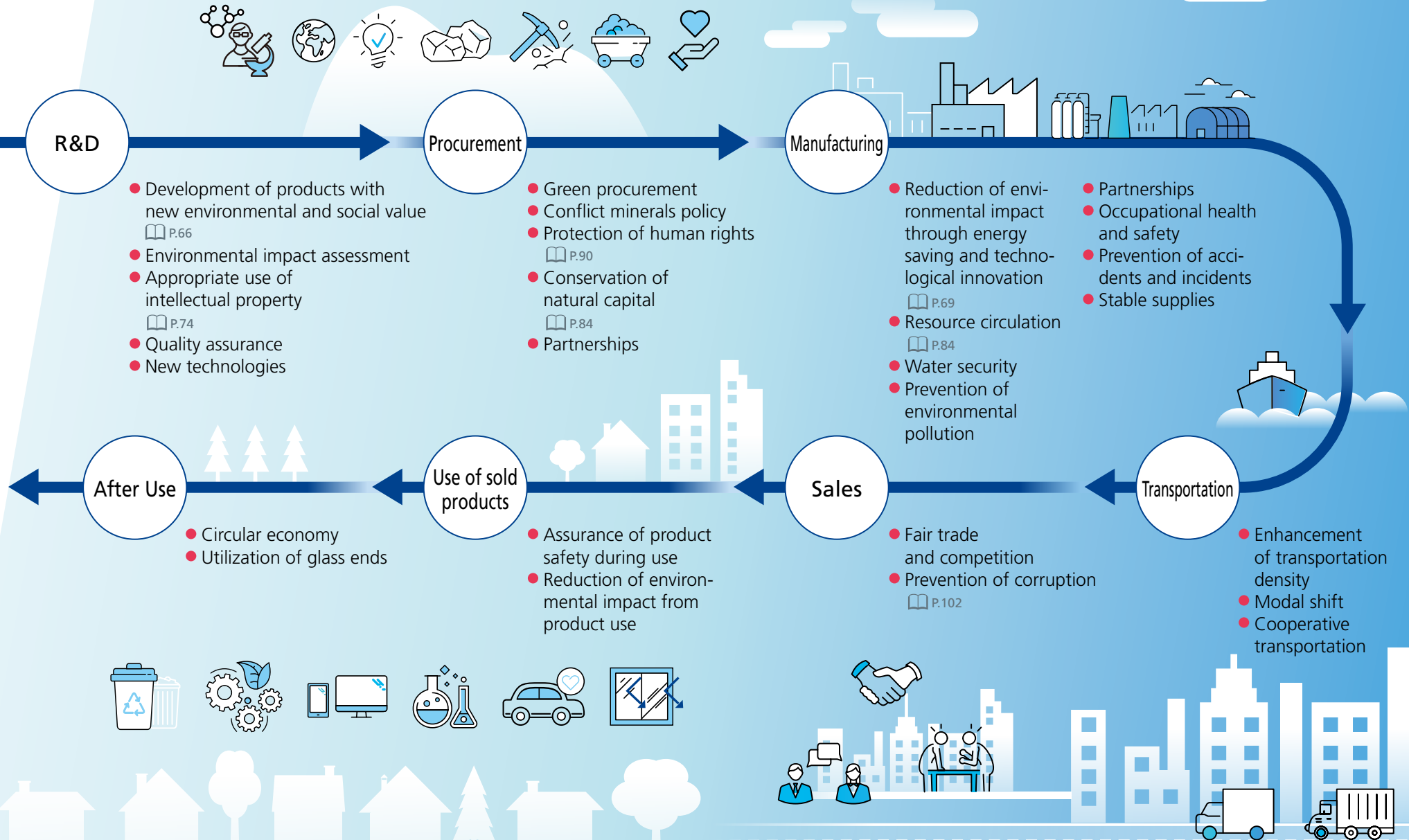
## The Life Science Field

We provide materials and services for pharmaceuticals and agrochemicals that cater to demand resulting from population growth, food shortages, longer life expectancy, and increasingly sophisticated medical needs.



# Our Value Chain Mapping

Through its value chain, the AGC Group will continue initiatives that both enhance long-term corporate value and address social issues.



## At a Glance

# The AGC Group: Providing a Broad Range of Materials and Solutions Worldwide

The AGC Group has established global business foundations spanning Japan, Asia, Europe, and the Americas. The Group's Architectural Glass, Automotive, Electronics, Chemicals, Life Science, and Ceramics businesses\*, as well as other businesses, create new value by leveraging a diverse range of world-class materials, technologies, advanced production technologies, and a broad customer base. These strengths have been cultivated over a history that stretches back more than 110 years.

\* In 2023, the Company changed its business segmentation based on the businesses stated above.

## Description of Businesses

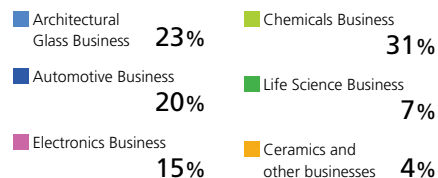
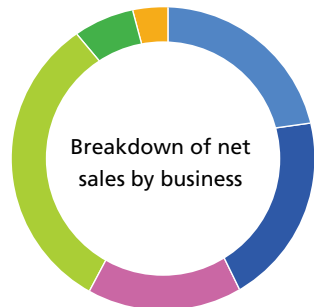
(Year ended December 31, 2022)

### The AGC Group

Net sales **¥2,035.9 billion**

Operating profit **¥183.9 billion**

Group employees **Approx. 57,600**



<b>Architectural Glass Business</b>	Net sales	<b>¥483.7 billion</b>		<b>Asia</b> Net sales <b>¥146.9 billion</b>
	Operating profit	<b>¥32.7 billion</b>		<b>Europe &amp; Americas</b> Net sales <b>¥335.8 billion</b>
<b>Automotive Business</b>	Net sales	<b>¥417.8 billion</b>		
	Operating loss	<b>¥9.8 billion</b>		
<b>Electronics Business</b>	Net sales	<b>¥307.2 billion</b>		<b>Display</b> Net sales <b>¥155.4 billion</b>
	Operating profit	<b>¥14.7 billion</b>		<b>Electronic Materials</b> Net sales <b>¥149.5 billion</b>
<b>Chemicals Business</b>	Net sales	<b>¥660.4 billion</b>		<b>Essential Chemicals</b> Net sales <b>¥489.8 billion</b>
	Operating profit	<b>¥126.1 billion</b>		<b>Performance Chemicals</b> Net sales <b>¥165.2 billion</b>
<b>Life Science Business</b>	Net sales	<b>¥141.8 billion</b>		
	Operating profit	<b>¥16.9 billion</b>		
<b>Ceramics and other businesses</b>	Net sales	<b>¥86.6 billion</b>		
	Operating profit	<b>¥3.7 billion</b>		

#### Notes

1. Results for 2022 are displayed using the revised segments.

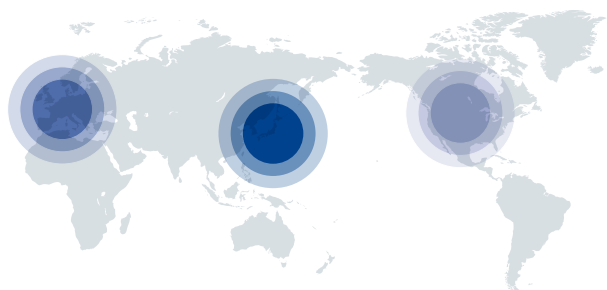
2. Sub-business net sales are based on net sales to external customers.

3. As net sales and operating profit by business are shown before the deduction of eliminations, the sum of net sales by business does not equal Companywide net sales, and the sum of operating profit by segment does not equal Companywide operating profit.

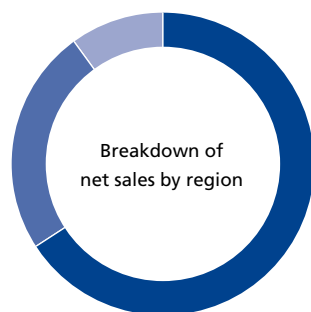


## Global Expansion

(Year ended December 31, 2022)



Operating businesses in more than  
30 countries and regions,  
including Japan, Asia, Europe,  
and the Americas



■ Japan / Asia	64%
■ Europe	26%
■ The Americas	10%

	Japan / Asia	Europe	The Americas
Net sales	¥1,302.7 billion	¥525.4 billion	¥207.8 billion
Operating profit	¥187.1 billion	¥31.4 billion	¥7.2 billion
Group employees	Approx. 35,700	Approx. 17,200	Approx. 4,700
Number of manufacturing sites	51	36 (including Africa)	9

Architectural Glass	7	11	1
Automotive	12	7	4
Electronics	23	1	2
Chemicals	2	13	1
Life Science	2	4	1
Ceramics	5	0	0

Note: As net sales and operating profit (loss) by region are shown before the deduction of eliminations and common regional expenses, the sum of net sales by region does not equal Companywide net sales, and the sum of operating profit (loss) by region does not equal Companywide operating profit (loss).

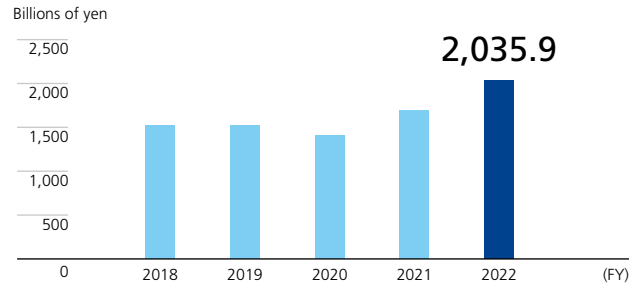


For information on net sales and operating profit by business segment:

[https://www.agc.com/ir/pdf/data\\_all.pdf](https://www.agc.com/ir/pdf/data_all.pdf)

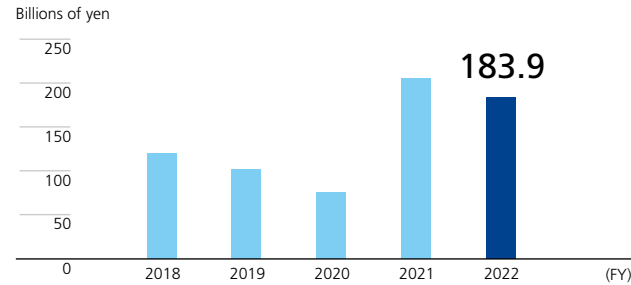
## Financial and Non-Financial Highlights

### Net Sales



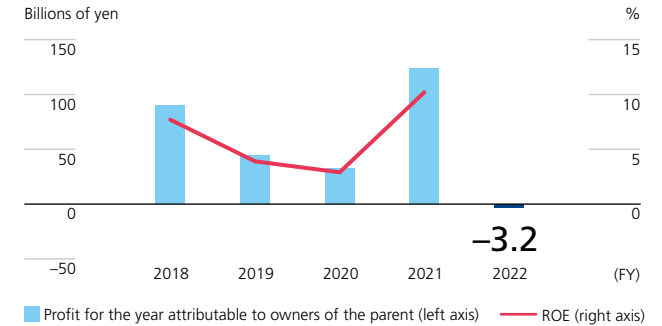
In 2022, net sales increased ¥338.5 billion year on year, to a record high of ¥2,035.9 billion, thanks to the expansion of Strategic Businesses, higher product selling prices, and the effect of foreign exchange rates.

### Operating Profit



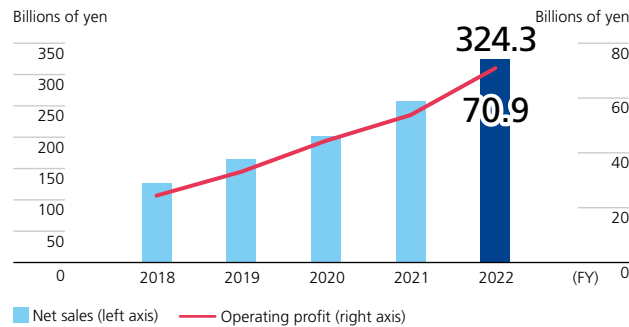
In 2022, operating profit declined ¥22.2 billion year on year, to ¥183.9 billion, due to a significant decrease in demand for displays and soaring raw materials and fuel costs.

### Profit for the Year Attributable to Owners of the Parent and ROE



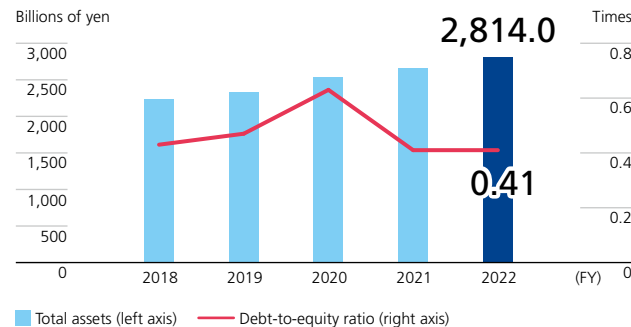
In 2022, loss for the year attributable to owners of the parent of ¥3.2 billion was recorded, reflecting the recognition of large impairment losses in the Display and Printed Circuit Board Materials businesses.

### Net Sales and Operating Profit of Strategic Businesses



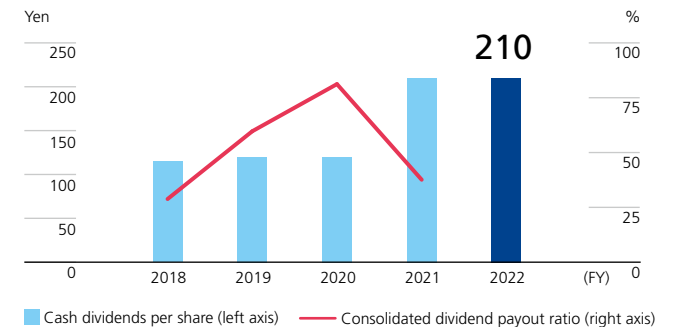
In 2022, expansion of the Electronics and Life Science businesses led to year on year increases in the net sales and operating profit of Strategic Businesses.

### Total Assets and Debt-to-Equity Ratio



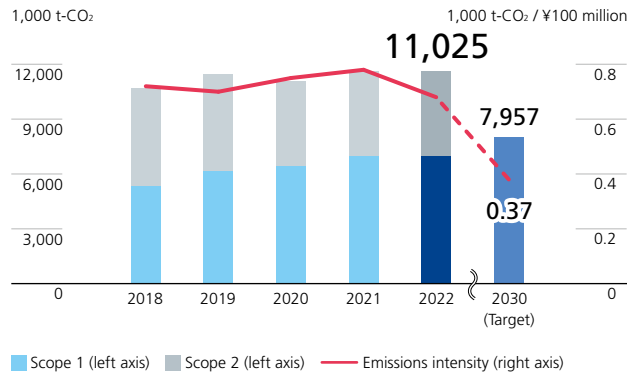
At the end of 2022, the debt-to-equity ratio was 0.41, unchanged from the previous year-end.

### Cash Dividends per Share and Consolidated Dividend Payout Ratio



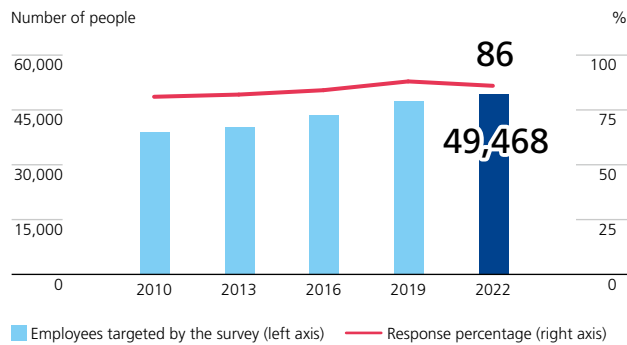
Although loss for the year attributable to owners of the parent was recognized in 2022, an annual dividend of ¥210 per share was paid in light of medium-term growth.

### GHG Emissions (Scope 1 and Scope 2)



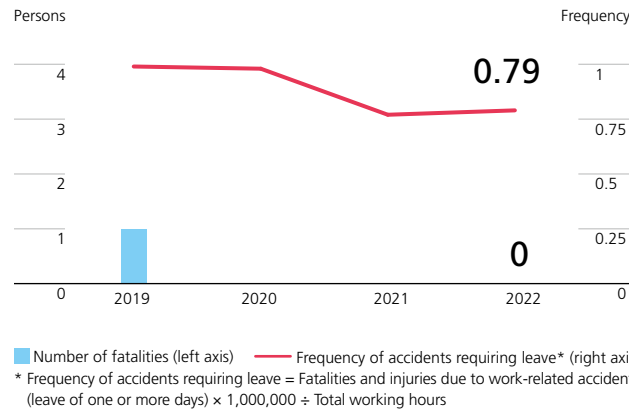
Our goal is to realize net-zero carbon emissions by 2050. By 2030, we aim to achieve reductions, compared with 2019 levels of, 30% in GHG emissions and 50% in GHG emissions per unit of sales.

### Employee Engagement Survey



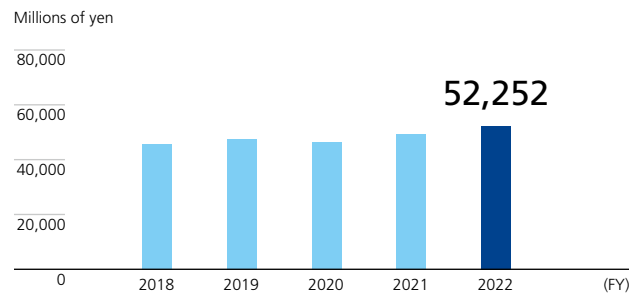
An employee engagement survey targeting all AGC Group employees is conducted every three years. Based on the survey results, required measures are determined and implemented in each division and workplace, with the effects of these measures being confirmed by subsequent surveys.

### Number of Occupational Accidents



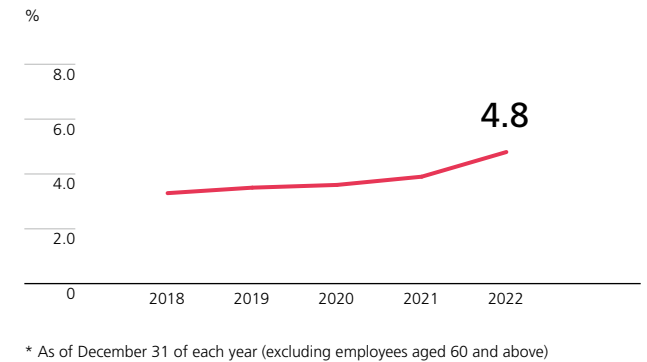
The AGC Group promotes health and safety activities based on its policy of "No Production without Safety."

### Research and Development Expenses



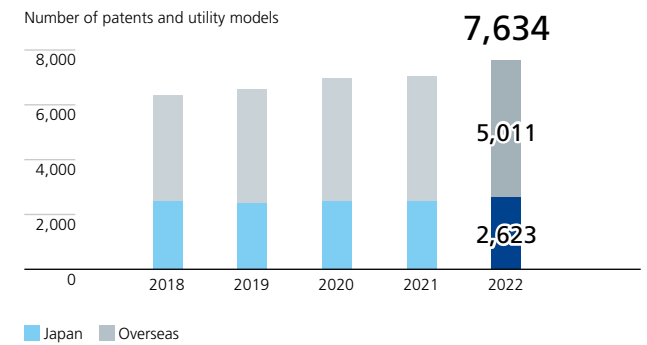
AGC will advance research and development to continuously create economic and social value based on the Company's core technologies, which span the glass, electronics, chemicals, and ceramics fields.

### Percentage of Female Managers\* (Managers and Above) (AGC, Non-Consolidated Basis)



To provide society with value through the realization of diversity that empowers talented personnel regardless of gender, AGC aims for women to account for 30% of its directors and Audit & Supervisory Board members, 20% of its executive officers, and 8% of its managers by 2030 on a non-consolidated basis.

### Patents and Utility Models



Through its strategy for intellectual properties, which are integrated with its management strategies, AGC will take on global competition.

# Long-Term Management Strategy Toward Realizing Vision 2030

In February 2021, the AGC Group unveiled the long-term management strategy Vision 2030 and the medium-term management plan **AGC plus-2023**.

The Vision calls for the sustainable creation of social and economic value over the long term through two key strategies: business portfolio transformation and the promotion of sustainability management. We are currently moving forward with initiatives in line with these strategies.



## AGC's Group Vision and Medium- to Long-Term Management Strategy

To continue growing and evolving as a corporate group, the AGC Group has systematized its management strategies and plans and made AGC's Group Vision **"Look Beyond"** the starting point for all business and social activities. As well as formulating the long-term management strategy Vision 2030, we have established the medium-term management plan **AGC plus-2023** with a view to realizing this Vision.

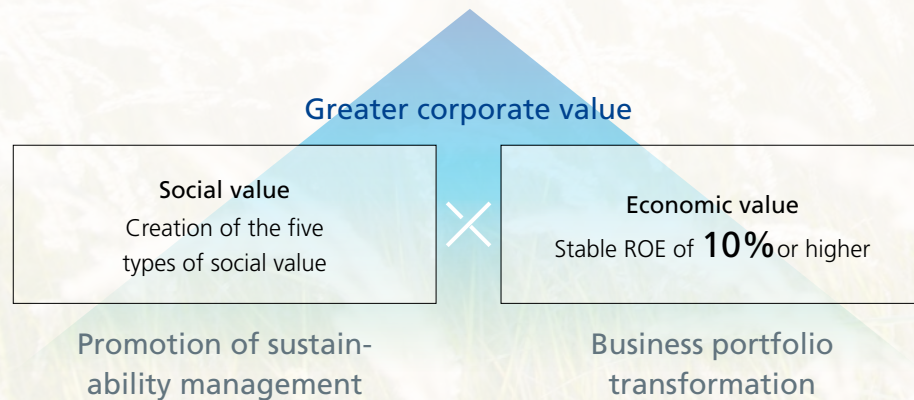


## Long-Term Management Strategy: Vision 2030

Under Vision 2030, AGC has set the following aim: “By providing differentiated materials and solutions, AGC strives to help realize a sustainable society and become an excellent company that grows and evolves continuously.” In realizing this aim, the Company must simultaneously create economic and social value. We will create economic value by improving capital efficiency through the reform of business models and the creation of new businesses. At the same time, we will create social value by advancing various corporate activities and providing products and technologies. Our first major strategy in this endeavor is business portfolio transformation. AGC aims to expand Strategic Businesses






and accelerate growth while reforming business models and core business structures. In this way, AGC plans to build a business portfolio resilient to changes in market conditions with high asset efficiency, growth potential, and carbon efficiency. Our second major strategy is the promotion of sustainability management. Accordingly, we conduct business activities with the aim of minimizing any negative impact and maximizing any positive impact on the planet and society. While creating five types of social value, we will realize a stable ROE of 10% or higher.

By providing differentiated materials and solutions, AGC strives to help realize a sustainable society and become an excellent company that grows and evolves continuously.



### Social Value the AGC Group Wants to Create

Creation of the five types of social value through business activities to resolve social issues

Contributing to the realization of safe and comfortable urban infrastructure	Contributing to the realization of safe and healthy lifestyles	Contributing to the maintenance of a healthy and secure society	Contributing to the creation of fair and safe workplaces	Contributing to the realization of a sustainable global environment
				
<p>Examples of initiatives: Development and production of infrastructure materials, such as architectural Low-E double-glazing glass, automotive UV-cut glass, and PVC</p>	<p>Examples of initiatives: Development and production of pharmaceuticals (intermediates, active ingredients), agrochemicals (intermediates, active ingredients), and films for agricultural greenhouses</p>	<p>Examples of initiatives: Contributions to regional society, consideration of the surrounding environment, and guaranteeing human rights in the supply chain</p>	<p>Examples of initiatives: Initiatives to manage safety in work environments, respect for and acceptance of diversity, and improvement of employee engagement</p>	<p>Examples of initiatives: Development of products and technologies that help reduce greenhouse gas emissions, response to climate change issues, and effective use of resources</p>

## Progress of Medium-Term Management Plan *AGC plus-2023*

To ensure realization of the long-term management strategy Vision 2030, AGC formulated the medium-term management plan *AGC plus-2023* in 2021.

### *AGC plus-2023* Financial Targets

	FY2021 results	FY2022 results	2023 forecasts
Operating profit	¥206.2 billion	¥183.9 billion	¥190.0 billion
ROE	10.2%	—	6.3%*
Operating profit of Strategic Businesses	¥53.8 billion	¥70.9 billion	¥80.0 billion
Debt-to-equity ratio	0.41	0.41	0.5 or lower

#### Reference

	FY2023 targets (Set in February 5, 2021)	FY2023 targets (Set in February 8, 2022)
Operating profit	¥160.0 billion	¥230.0 billion
ROE	8%	10%
Operating profit of Strategic Businesses	¥70.0 billion	¥80.0 billion
Debt-to-equity ratio	0.5 or lower	0.5 or lower

\* Forecast ROE for 2023 is calculated using the figures for profit for the year attributable to owners of the parent as of Dec 31, 2022.

### Key strategies

#### Pursuing “ambidextrous” management

- We will accelerate growth in our strategic business areas and at the same time explore new business areas, including those relating to energy.
- In our core business segments, we will implement structural reforms to address continuing profitability and asset efficiency issues in the architectural glass and automotive glass businesses.
- In other core business areas, we will strengthen profit bases and cash generation capacity.

#### Promotion of sustainability management

- We will accelerate the solution of social issues through materials innovation.
- We will work toward net-zero carbon emissions by 2050.
- We will strengthen human resources and group-wide governance.

#### Gaining Competitiveness by Accelerating Digital Transformation

- We will leverage digital technologies to improve process from product development to sales, ultimately leading to the transformation of business models.
- We will use digital technologies to gain a competitive advantage by providing value to customers and society.

Progress under the key strategies is as follows.

### Key Strategy

## Pursuing “Organizational Ambidexterity”

### Strategic Businesses

As Strategic Businesses are resilient to market fluctuations and have high levels of asset and carbon efficiency, growing these businesses is a way to advance the Group’s business portfolio transformation strategy. In 2022, we actively invested funds with a focus on the Electronics and Life Science businesses. For example, we decided to increase production capacity for EUV lithography photomask blanks in Japan, synthetic pharmaceuticals in Spain, and gene and cell therapy contract development and manufacturing organizations (CDMOs) in the United States. The Electronics Business will continue expanding and enhancing its lineup of high-value-added offerings. Meanwhile, the Life Science Business will continue aggressive investment in step with market growth, and the Mobility Business will grow with a focus on cover glass for car-mounted displays. Our aim is for the operating profit of Strategic Businesses to reach ¥100.0 billion in 2024.

### Core Businesses

Core Businesses will achieve an even greater level of earnings stability and improve asset and carbon efficiency. With respect to the Chemicals Business, in 2022 we decided to strengthen the operational foundations of the Chlor-Alkali Business—part of the Essential Chemicals Business—by consolidating and reorganizing operating companies that have businesses in Indochina and significantly increasing production capacity in Thailand. In addition, the fluorinated products of the Performance Chemicals Business are earning a strong reputation in leading-edge industrial fields such as high-speed communications equipment, fuel cell vehicles, and hydrogen energy. As sales of these products are expected to continue growing, we have decided to follow on from 2021’s production capacity increase by raising production capacity again in 2023. The Architectural Glass Business enhanced its asset efficiency and stability through structural reforms, including the disposal of U.S. manufacturers and distributors of soda ash, which is a raw material for glass. Aiming to further improve and stabilize the profitability of Core Businesses as a whole, we will steadily proceed with structural reforms in the Automotive and Display businesses as well as in other businesses where profitability and asset efficiency remain issues.

## Increasing Production Capacity for EUV Lithography Photomask Blanks

In addition to the adoption of EUV lithography technology-enabled semiconductor production processes for logic applications, recent years have seen the increasing adoption of these processes for DRAM\* and other memory applications. As a result, demand for EUV lithography photomask blanks is rising. Moreover, shipments of EUV lithography photomask blanks for the next generation and future generations of semiconductors are expected. In response to market demand, the AGC Group is ramping up the production capacity for EUV lithography photomask blanks made by AGC Electronics Co., Ltd., in Japan.

Since its 2003 commencement of R&D on EUV lithography photomask blanks used in EUV lithography technology-enabled semiconductor production processes, the AGC Group has been developing technologies by integrating proprietary technologies for glass materials, glass processing, and coating. We began manufacturing EUV lithography photomask blanks in 2017. As the world's only corporate group able to realize integrated manufacturing of EUV lithography photomask blanks that encompasses glass materials processes through to coating processes, we have been making the necessary investments in stages to meet market demand. In July 2020, AGC Electronics decided to boost production capacity again by initiating a large-scale construction project, which included the expansion of the plant building. The expanded plant started up production in January 2022. Since a further increase in January 2023, production capacity has been raised in stages. In addition, in April 2023 our efforts were adopted as a project by the Ministry of Economy, Trade and Industry (METI) under its Program for Promoting Investment in Japan to Strengthen Supply Chains. Accordingly, we have begun increasing capacity in relation to next-generation production catering to the further miniaturization of semiconductor processes. As a result of this investment, in 2025 production capacity will increase by approximately 30% compared with the current level. Also, we aim to achieve sales of at least ¥40.0 billion by 2025. At the same time, the advance of the semiconductor industry will benefit day-to-day life.

\* This acronym stands for Dynamic Random Access Memory. DRAM is a type of semiconductor memory device that is generally used for the main memories of personal computers.



## Active Investment in the Life Science Business

We view the Life Science Business, which includes synthetic pharmaceutical\*<sup>1</sup> and agrochemical CDMOs\*<sup>2</sup> and biopharmaceutical CDMOs, as one of our Strategic Businesses. We aim to lift the net sales of this business from the 2018 level of ¥44.9 billion to above ¥200.0 billion in 2025. Having augmented the production capacity of AGC Wakasa Chemicals Co., Ltd. (Japan) in 2021, we raised the production capacity of synthetic pharmaceutical CDMO and operating subsidiary AGC Pharma Chemicals Europe, S.L.U. (Spain) in 2022. Further, the Group decided to increase the gene and cell therapy CDMO production capacity of the Longmont base in Colorado, operated by biopharmaceutical CDMO and subsidiary AGC Biologics S.p.A. This heightened production capacity in the United States—the world's largest market for gene and cell therapies—was made possible through technical support from the Group's gene and cell therapy base in Milan, Italy. Also, centered on collaboration with the Group's Heidelberg base in Germany, which is engaged in the contract manufacturing of gene and cell therapy raw material plasmid DNA, the Group will continue providing a one-stop CDMO service that covers plasmids through to gene and cell therapies to customers worldwide. We will maximize synergies among our bases to meet burgeoning demand; enable the provision of globally unified, high-quality services to customers in each region; and benefit pharmaceutical manufacturers, patients, and society as a whole.

\*<sup>1</sup> This refers to pharmaceuticals manufactured through chemical synthesis, including small molecule pharmaceuticals.  
 \*<sup>2</sup> This initialization stands for contract development and manufacturing organization, which is a company contracted to develop manufacturing methods and manufacture products.



Key Strategy

Promotion of Sustainability Management

Our Mission: AGC, an Everyday Essential Part of Our World”

Since its foundation, the AGC Group has addressed each era’s social issues by advancing ambitious R&D and commercialization initiatives based on long-term perspectives and relationships of trust with customers. We have analyzed long-term trends in social issues and identified opportunities and risks (material issues) that have an important bearing on the goal of simultaneously contributing to the realization of a sustainable society while achieving continued corporate growth. In light of these important opportunities and risks, we create social and economic value and set financial and non-financial targets for businesses.

Initiatives Focused on Climate Change

With the aims of achieving *net-zero carbon emissions* by fiscal 2050 and contributing to the achievement of a sustainable global environment, the AGC Group has set milestone targets for reducing Scope 1 and 2 GHG emissions by 30% and GHG emissions intensity per unit of sales\*1 by 50% by fiscal 2030, compared with fiscal 2019 levels. Based on a roadmap, we are implementing specific measures, including initiatives to reduce the GHG emissions of glass furnaces. In June 2022, we set a 30% reduction in Scope 3 GHG emissions\*2 as a target. Moreover, in 2023 we will formulate a roadmap for reaching a Scope 3 GHG emissions reduction target. In recognition of these efforts and our proactive disclosure, we were certified as an “A List company” in the climate change area in 2022 by the CDP, an international non-profit organization that addresses environmental issues such as climate change. In addition, the AGC Group has received WB2°C (well-below 2°C) certification from the Science Based Targets initiative. The AGC Group not only aims to reduce its own GHG emissions but also to provide products and technologies that help society realize net-zero carbon emissions. As part of these efforts, we market vacuum-insulating glass; building-integrated photovoltaic (BIPV) modules;

environment-friendly, next-generation refrigerants and solvents; and fluorine-based electrolyte polymers for fuel cells. Also, the full-fledged introduction of internal carbon pricing in 2022 is helping us to step up low-carbon investments.

\*1 Greenhouse gas emissions intensity per unit of sales = Scope 1 + Scope 2 emissions ÷ Net sales

\*2 Total of categories 1,10,11, and 12 in Scope 3 emissions

FY 2020 FY 2030 FY 2050

Net-Zero Carbon Emissions by FY2050 (Scope 1 and 2)

FY2030 milestone (compared with FY2019)

Scope 1 Scope 2	<ul style="list-style-type: none"> <li>Greenhouse gas emissions: <b>30% reduction</b> (Scope 1 and Scope 2 emissions)</li> <li>Greenhouse gas emissions intensity per unit of sales: <b>50% reduction</b> (Scope 1 and Scope 2 emissions intensity per unit of sales)</li> </ul>
Scope 3	<ul style="list-style-type: none"> <li>Greenhouse gas emissions: <b>30% reduction</b> (Total of categories 1,10,11, and 12 in Scope 3 emissions)</li> </ul>



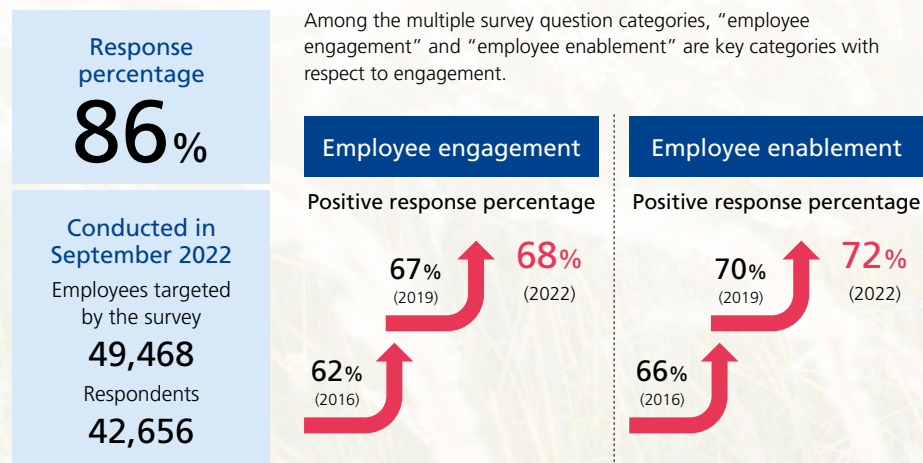
### Continuous Evolution of Our Human Capital and Corporate Culture

The motto *AGC People: the driver of our growth!* expresses how much we have always valued our personnel. A corporate culture that encourages ambitious initiatives has constantly increased the AGC Group’s competitive advantages. Further, the Group fosters innovation by encouraging employees with diverse ideas to freely share their opinions and engage in friendly rivalry. The senior management team is highly committed to fostering an open corporate culture, which is one of the top priorities in the business management of the Group. Although dialogue meetings between the senior management team and employees were temporarily reduced due to COVID-19, 2022 saw the resumption of visits to domestic and overseas offices and the holding of 108 face-to-face meetings with the CEO.

To create an environment where diverse personnel can make the most of their individual talents, we have established a Diversity Council, which is accelerating measures to promote diversity. In addressing gender-related issues, which are particularly challenging in Japan, we have set targets for the percentages of female directors, executive officers, and managers,\* and we are steadily advancing toward these targets through training and the implementation of individual development plans.

\* AGC on a nonconsolidated basis

### Summary of 2022 Engagement Survey Results



Employee engagement is critical in maintaining and enhancing competitive advantages. The AGC Group conducts an employee engagement survey every three years. The 2022 survey showed better scores in all categories compared with the results of the previous survey.

#### Key Strategy

### Gaining Competitiveness by Accelerating Digital Transformation

We are achieving operational excellence, strengthening our co-creation foundations as a materials manufacturer, and providing added value to customers by using digital technologies to improve a wide array of processes—from product development and manufacturing through to sales, marketing, and logistics. To facilitate these initiatives, the AGC Group is developing dual skilled, digitally literate personnel who combine expertise in operations with advanced data analysis skills. Our Data Science Plus program for developing data scientists offers three levels of training: introductory, basic and applied, and advanced. Further, we have established Digital Transformation Training for Managers, which targets the senior managers of in-house companies, and Data Utilization Training for Plant Technicians. With a view to further accelerating corporate transformation through digital transformation, in January 2023 we consolidated existing organizations to establish the Digital & Innovation Promotion Division, responsible for strategy planning, support, and human resources development in relation to digital technology. By further utilizing digital technologies, we will forge ahead with corporate transformation.

For details on respective initiatives, please see these pages.

- P.84 Initiatives to Combat Climate Change
- P.76 Our Human Capital and Corporate Culture
- P.71 Initiatives of DX

# Process for Identifying Long-Term Social Issues (Material Issues)

Following the process below, the AGC Group identifies long-term material issues as major opportunities and major risks that might have an impact on the long-term direction of business and corporate value.

## Formulation Process

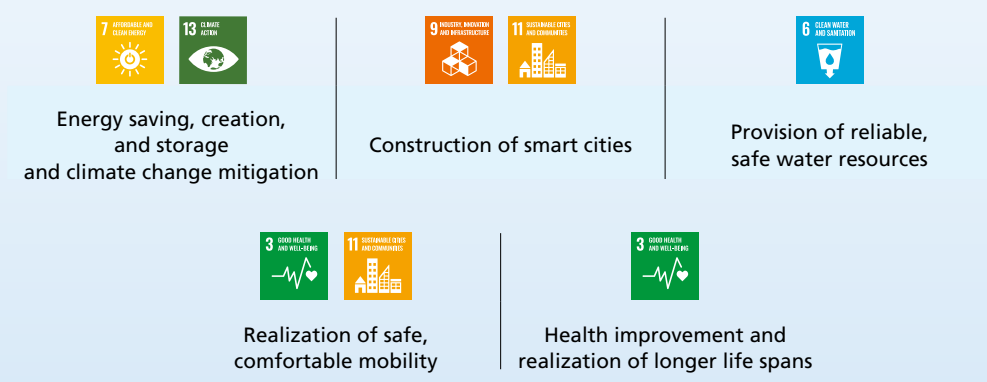
1

### SDG mapping

To enable analysis of our long-term social issues, we reconfirmed our current progress toward the realization of sustainability by using the 169 targets of the SDGs as the basis for an analysis of the types of social issues addressed by our existing products.

1. Focused on existing mainstay products in each business field
2. Calculated the “business impact score” for each product based on its sales and growth potential
3. Linked each product to the SDG targets to which it can contribute
4. Described the type of social value that the AGC Group is creating in relation to each SDG by taking into account the contributions of all products linked to a given target
5. Added up the total business impact score of all products linked to each type of social value
6. Corrected the business impact score for each type of social value based on the degree of contribution to addressing social issues
7. Set the corrected results as the social impact score and identified the top 15 types of notable social value

The above procedure identified fields where existing products can help address current social issues.



2

### Analyzing social issues and trends

In light of its current contributions to the resolution of social issues, important opportunities and risks for the Group going forward were identified through analysis of future trends in social issues. (The analysis results were also used as basic information in preparing Vision 2030.)

① Compiled a list of social issues

- 169 targets of the SDGs
- Sustainability megatrends (circular economy, etc.)
- Based on the Global Risks Report (World Economic Forum), compiled a list of items representing opportunities and risks for the AGC Group (79 items in total)

② Assessed material issues for stakeholders

**Social issues with opportunities**  
 With respect to the list of social issues,  
 • Identified social issues addressed by customers and competitor  
 • Assessed material issues based on sustainability and megatrends

**Social issues with risks**  
 With respect to the list of social issues, assessed material issues based on the assessment indicators of major ESG rating organizations

③ Assessed material issues for the AGC Group

**Social issues with opportunities**  
 With respect to the list of social issues, assessed material issues based on relevance to current Core and Strategic Businesses and the potential fields for the latter

**Social issues with risks**  
 With respect to the list of social issues, assessed material issues based on overviews of the Group’s value chains, including upstream and downstream

3

### Identifying major opportunities and major risks

Based on the results of analyzing trends in social issues and in light of expert opinions, we identified major opportunities and major risks associated with simultaneously achieving sustainable development of the planet and society and sustainable growth as a corporate group. These opportunities and risks are discussed and determined by the Sustainability Committee and the Board of Directors and were then used as the foundation for setting sustainability targets.

Major Opportunities	Major Risks
<ul style="list-style-type: none"> <li>• Addressing climate change</li> </ul>	<ul style="list-style-type: none"> <li>• Using resources effectively</li> </ul>
<ul style="list-style-type: none"> <li>• Developing social infrastructure</li> <li>• Achieving safe, comfortable mobility</li> <li>• Addressing food crises</li> <li>• Building an info-oriented, IoT-society</li> <li>• Facilitating better health and longevity</li> </ul>	<ul style="list-style-type: none"> <li>• Creating socially and environmentally conscious supply chains</li> <li>• Ensuring fair and equal employment and workplace safety</li> <li>• Considering relationships with local communities and the environment</li> </ul>

# Business Strategies

This section gives an overview of each business and its strategies.

- 43 Architectural Glass Business
- 49 Automotive Business
- 52 Electronics Business
- 56 Chemical Business
- 60 Life Science Business
- 63 Ceramics Business
- 64 New Business Creation





# Architectural Glass Business

## Europe & Americas

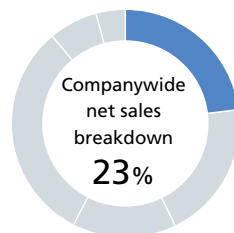
We lead the way for a better world.

## Asia

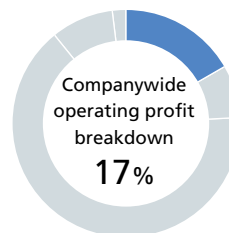
We will mobilize the talents of diverse personnel to provide new value and remain the most trusted leading company in Asia.

### Fiscal 2022 Performance

Net sales  
¥483.7 billion

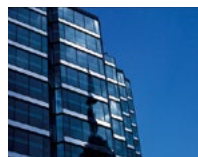


Operating profit  
¥32.7 billion



\* As it recognized an operating loss, the Automotive Business is not included in the above Companywide operating profit breakdown.

### Overview



Architectural glass



Building-integrated  
photovoltaic (BIPV)  
modules



Glass antennas

In 1909, we became the first company to successfully produce flat glass in Japan. Now, we boast one of the largest shares of the global market for float glass. Since its establishment, the AGC Group's Architectural Glass Business has been a mainstay of revenues. Currently, we are aggressively developing new businesses that manufacture high-performance glass and environment-friendly glass. Examples of these leading-edge products include float glass for homes, buildings, and industrial use and high-performance glass such as double-glazing glass with heat-insulating and heat-shielding properties and laminated glass ideally suited to crime prevention applications.

#### Main Products

Float glass, laminated glass, double-glazing glass, Low-E glass, tempered glass, heat-resistant tempered glass, mirrors, colored glass, figured glass, and wired glass

### Business Strategy

## Europe & Americas Business



### Davide Cappellino

President of Architectural Glass Europe  
& Americas Company

Our goal is to achieve both high levels of asset efficiency and carbon efficiency by implementing the following strategies based on our management policy, which states that "We lead the way for a better world."

#### Be the Best Player in Each of Our Business Fields

We focus on the geographic area where we can win, accelerate innovation and apply the latest digital technologies to build the best supply chain and become the most reliable player in each of our markets. As part of efforts to focus on the region where we can win, in 2022 we disposed of all shares of Solvay Soda Ash Joint Venture and Solvay Soda Ash Extension Joint Venture, resulting in a complete exit from North American business, following the divestiture of architectural business in that region.

The world is becoming more and more conscious about the necessity to invest in energy conservation, for environmental and for economic reasons, and to achieve a better quality of life. We at AGC Architectural Glass & Europe America (AGEA), are bringing to the market products that greatly contribute to the energy efficiency of buildings and that make life more comfortable. Therefore, we are very confident about the potential of our market, both for the construction of new buildings and in renovation, which is a major trend in developed markets.

## Architectural Glass Europe & Americas Business

### Business Environment

#### Opportunities

- Widening adoption of the environment-friendly Renovation Wave Strategy,\* mainly in Europe
- Growth in demand for environment-friendly products with improved energy efficiency and other benefits
- Growth of markets for 5G communications and other next-generation high-speed communications

\* Announced in 2020 by the European Commission to promote renovation that improves the energy efficiency of buildings

#### Risk

- Regulations and social obligations focused on the GHG emissions of glass production processes

### Main Task

	Business	Main Task
Core Business	Architectural Glass Europe & Americas	<ul style="list-style-type: none"> <li>• Be a long-term stable source of earnings for the Group by increasing competitiveness in our core markets</li> </ul>

### Strengths

- A powerful brand that customers associate with advanced performance, quality, and reliability
- The industry's most extensive product lineup, stretching from commodity products through to leading-edge high-value-added products
- An integrated value chain
- Comprehensive glass technology-related capabilities as a leading global company

We want to be the best player in the market, to support our customers, and allow them to secure all the opportunities ahead of us. Through these activities, we will improve further our asset efficiency.

#### Adopt Integrated Value Chain Approach

The value chain of architectural glass can be split into two parts: "upstream" and "downstream." In the "upstream" part, natural raw materials are melted to form flat glass. Through special treatments, we add a variety of performance and functionality to flat glass, including heat reflection, safety, and decorativeness. Then in the "downstream" part of the business, large panes of glass are transformed into finished products that can be distributed to the final customers and installed in building facades, windows and for the decoration of the home interiors. The integrated glass value chain approach of AGC, with an optimized balance between upstream and downstream activities in every market, is maximizing financial performance and assuring a higher resilience to the cycles of the economy, as downstream activities assure captive output to the upstream, while presenting less fluctuations thanks to the proximity to the final

customers. Moreover, our geographical presence in different and decorrelated markets and regions is also shielding us from the excessive volatility of economic cycles.

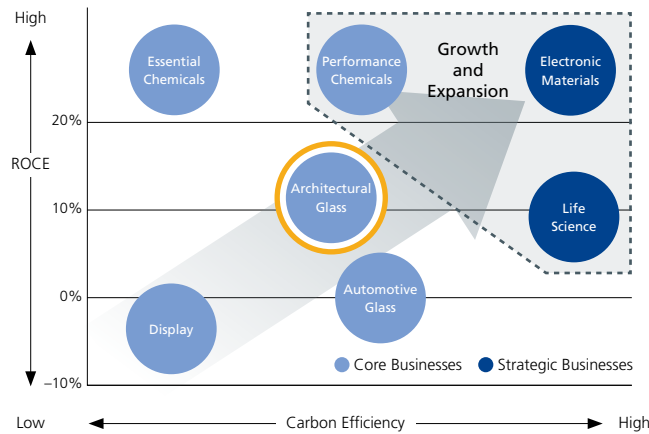
#### Quick Innovation, with a Purpose

The world is moving at a faster pace than ever, and so must do our innovation. We are improving our speed, so that we can quickly bring our new ideas to the market. At the same time, we are focusing our innovation initiatives, to concentrate our efforts in areas where we can generate more value for our customers and for society. One of our focus areas for innovation is the field of telecommunications. By applying our experience in glass technology, we can treat the glass surfaces to control the transmission of electromagnetic signals. Depending on the needs of the customers, we can transform a window into a perfect barrier to 4G and 5G radio waves, or a transparent gateway, or even an amplifier of signal. We recently launched the "WAVETHRU" service, which is an aftermarket service to address the stock of windows already installed. We will concentrate and accelerate innovation activities to provide higher value to customers and society and to improve asset efficiency even further.

#### Become a Leader in Sustainability

To contribute to a carbon-neutral society, we are taking major steps to reduce GHG emissions, both through our production processes and environment-friendly products. As a leader in glass, we want to play a major role in the evolution of the industry toward sustainability. In 2022, we began marketing low-carbon glass, which has a carbon footprint approximately 40% smaller than that of our standard product. Further, in 2023 we concluded an agreement with Compagnie de Saint-Gobain SA on the joint development of technologies that will significantly reduce CO<sub>2</sub> emissions during the manufacturing of flat glass. Under this joint development project, we will begin demonstration tests at a state-of-the-art pilot plant in the second half of 2024. Our 100-year-strong experience in glass melting is a great asset in this moment of challenging technological changes. AGEA will contribute strongly to the achievement of AGC's goal to be carbon neutral by 2050. At the same time, we will keep on enriching our product range with eco-friendly and energy efficient glass products. As our products greatly contribute to the thermal efficiency of buildings, during the lifetime of our

products the CO<sub>2</sub> emissions that we contribute to avoid are conspicuous, many times more than the CO<sub>2</sub> emitted during the production process, even when using traditional technologies.



**Realize Business Excellence**

Every day, we take on the challenge of continuously improving our business to make it more efficient, more competitive, more capable of bringing reliability and satisfaction to our customers. AGEA has also been enhancing asset efficiency through structural reform measures, such as the rightsizing of the European headquarters workforce, which included early retirement, and the 2019 closure of one manufacturing furnace in France.

**Fiscal 2022 Review**

**Architectural Glass Europe & Americas Business**  
 Although shipments declined due to an economic slowdown associated with the Russian invasion of Ukraine, revenues increased, reflecting the passing on of hikes in natural gas prices to selling prices and the effect of foreign exchange rates. On the other hand, profits decreased due to the soaring prices of other fuels and raw materials.

# Architectural Glass Asia Pacific Business

## Business Environment

### Opportunities

- Growing demand for environment-friendly products, such as products that improve energy efficiency and BIPV (Building Integrated Photovoltaics) products
- Technological differentiation through innovation in manufacturing technologies
- Window openings in buildings becoming a potential platform to serve a more sophisticated society's infrastructure by such solutions as glass antennas
- Permeation of high-value-added products in growing Asian markets such as Thailand and Indonesia, and also in Oceania

### Risks

- Meeting further requirements stemming from climate change issues (for example, the need to further reduce the GHG emissions of float glass furnaces)
- Emergence of fierce competition as a result of oversupply in the region

## Main Tasks

	Business	Main Tasks
Core Business	Architectural Glass Asia Pacific	<ul style="list-style-type: none"> <li>• Generate cash as a Core Business</li> <li>• Grow through new businesses and high-value-added products</li> <li>• Address climate change and achieve other SDGs initiatives</li> </ul>

## Strengths

- Expertise in developing high-performance glass products and process engineering capability, with world-leading class energy-saving glass being a representative example
- Manufacturing capabilities from float glass, to various coating and processing technologies
- Ability to offer customers value
- Robust supply chain underpinned by trust fostered over many years
- Diverse human resources, who support the abovementioned strengths as well as our global network

## Asia



**Shigeki Yoshiba**

President of Architectural Glass Asia Pacific Company

The Architectural Glass Asia Pacific Company will continue to be the most trusted leading player in the architectural glass field and enhance the global collaborations of the Architectural Glass Business by accelerating the planning and implementation of business strategies that reflect regional conditions in Japan, Asia,

and Oceania. In each market, robust supply chains, stable supply capabilities, a strong market presence, and advanced development and technological capabilities will support our growth. The company will capitalize on these advantages to further enhance asset efficiency, improve productivity, reduce costs, and advance development that facilitates GHG emissions reduction, thereby making the business sounder and stronger than ever. Also, we will build a sustainable future by extensively rolling out energy conservation and energy creation products that reduce GHG emissions.

### Japan Business

We operate at every stage of the supply chain, from glass production to sales and installation. While fully utilizing production facilities that are among the largest of their kind in Japan and which are the foundations of our business, we capitalize on our nationwide network of glass-processing sites

as well as our distribution networks and those of our customers to stably manufacture and sell high-value-added products such as energy-saving glass. Engagement in businesses throughout the supply chain allows us to realize high levels of asset efficiency. Further, as high-value-added products result in less CO<sub>2</sub> emissions, we are lowering carbon intensity by increasing the value added to each unit of glass sold. Through the utilization of know-how gained from catering to and offering solutions for a wide range of needs, we are also developing products that enhance our contribution to the realization of a decarbonized, sustainable society. One example of these efforts is Thermocline™, which has a longer service life and is more readily recyclable than other types of double-glazing glass that have high thermal insulation.

Another major strength is our ability to install products for various projects nationwide. These extensive installation capabilities not only support the existing glass business but also play a crucial role in the development of businesses that provide GHG emissions-reducing offerings, such as BIPV products.

**Asia Business**

Asia and Oceania promise market growth. In these regions, we will achieve growth in the float glass market by focusing on Indonesia and Thailand, which are major markets for this type of glass. At the same time, we will seek growth in the market for high-value-added products. Centered on coated glass, this market is expected to expand in line with the increasing emphasis on the creation of a low-carbon society.

Our float glass business remains the primary source of reliable sales and profits thanks to customer trust fostered over many years, our ability to supply products stably, and an extensive sales network inside and outside Asia. Meanwhile, by capitalizing on our position as the only domestic supplier of coated glass in Indonesia and Thailand as well as a strong market presence, we are advancing businesses in the market for coated glass and other high-value-added products that offer excellent heat-insulating and heat-shielding properties alongside outstanding energy-saving benefits. In addition to initiatives in these two countries, in other countries we aim to take the initiative in expanding and accelerating the shift toward high-value-added products and contributing to the realization of a low-carbon society. To this end, we will advance sales activities targeting markets in Asia, Oceania, and other regions while promoting the spread of high-value-added products through industry-government-academia partnerships.

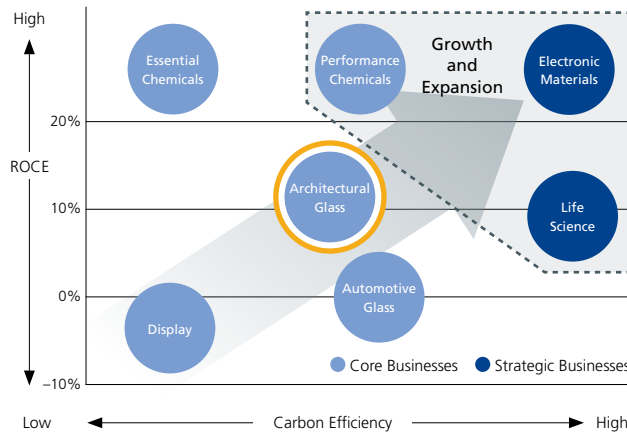
**Development of Manufacturing Technologies**

While continuing to develop products that meet market needs, we are reducing GHG emissions in our glass manufacturing activities by introducing established environmental technologies as a short-term measure. These include waste heat recovery and solar power generation technologies. From a long-term perspective, we will create systems to support a recycling-based society, including systems for the further recycling of cullet (waste glass). Also we will develop technologies for clean energy usage and melting methods that are more environment friendly, leveraging the Group's accumulated expertise and global capabilities. In these ways, we will help realize a low-carbon society.

**Fiscal 2022 Review**

**Architectural Glass Business Asia**

Demand continued recovering from the impact of the COVID-19 pandemic. However, the business was affected by soaring raw materials and fuel costs and global economic stagnation in the second half of the year. Despite significant fluctuations during the year, total sales and profits increased in Japan and Asia compared with those of 2021 thanks to the maintenance of utilization rates of production capacity and the revision of sales prices.





Value Creation Case Study

Architectural glass with superior environmental performance has been attracting more and more attention in Europe since the European Commission announced its Renovation Wave Strategy in 2020.

Helping Decarbonize Europe by Promoting Insulating Glass

The replacement of single-pane window glass with double glazing, which has a superior insulation performance, increases the heating and cooling efficiency of buildings, thereby saving significant amounts of energy. However, Europe’s numerous historic buildings pose a problem for this strategy: existing window frames cannot be used because double-glazing glass is thicker than single-pane glass. Our solution to the problem is FINEO, a vacuum-insulating glass. This product’s compatibility with existing window frames is generating a great deal of interest in the European renovation market. While boasting best-in-class insulation performance, the glass has a thickness of less than 1 cm. By promoting the use of FINEO and other insulating glass, we will contribute significantly to the decarbonization of Europe.

Promoting Advanced Initiatives to Reduce CO<sub>2</sub> Emissions

Meanwhile, we are concentrating on reducing CO<sub>2</sub> emissions in glass manufacturing processes. In 2022, AGC Glass Europe S.A. launched a low-carbon glass. By implementing multifaceted energy saving measures, this product reduces CO<sub>2</sub> emissions by more than 40%\* compared to conventional float glass, including not only CO<sub>2</sub> emitted directly in the manufacturing process but also CO<sub>2</sub> emitted indirectly in the process from raw material procurement to distribution. Moreover, in 2023 AGC concluded an agreement with Saint-Gobain on the joint development of a new technology that will significantly reduce CO<sub>2</sub> emissions during the manufacture of flat glass.

\* Compared to AGC Glass Europe S.A. baseline: EPD (Environmental Product Declaration) for Planibel in the INIES database

Utilizing the AGC Group’s Advantages to Overcome Obstacles

The AGC Group is able to realize advanced initiatives such as those described above for three main reasons. The first is that AGC has unmatched proprietary technologies. For example, the aforementioned joint development with AGC’s competitor Saint-Gobain is feasible because each has outstanding technologies that differ from and complement those of the other. Saint-Gobain’s particular strength is electric melting technology, while AGC’s competence lies in oxygen combustion technology. Second, AGC manufactures a wide range of glass products and has a wealth of knowledge about glass manufacturing technology. Third, we disclose to our stakeholders our clear goals for achieving *net-zero carbon emissions*. This has allowed us to ambitiously pursue our efforts to reduce CO<sub>2</sub> emissions.

Given the indispensability of glass in daily life, technological breakthroughs in glass manufacturing can make a significant contribution to society’s sustainability. This is why it is so critical for

the AGC Group to become even more innovative and sustainable. Accordingly, we will focus on a wide range of initiatives that create social value. As well as CO<sub>2</sub> emission reductions, these initiatives will improve the safety of manufacturing processes and promote diversity, equity, and inclusion.



Dr Marc Foguegne

AGC Glass Europe S.A.  
Vice President, Sustainability



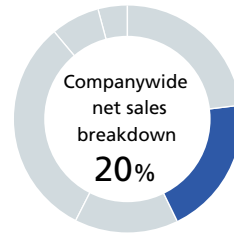


# Automotive Business

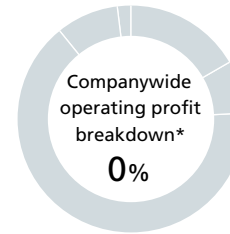
To make vehicles safe, comfortable, and to earn trust from society, we will provide differentiated leading-edge components and solutions for sustainable mobility.

## Fiscal 2022 Performance

Net sales  
**¥417.8 billion**



Operating loss  
**¥9.8 billion**



\* As it recognized an operating loss, the Automotive Business is not included in the above Companywide operating profit breakdown.

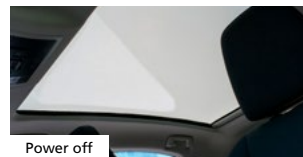
## Business Overview



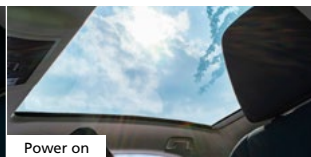
Laminated glass and tempered glass



Cover glass for car-mounted displays



Smart glazing



We have achieved a leading share of the global market for automotive glass by providing high-quality products, services, and solutions to global automobile manufacturers. The Automotive Glass Business, which is a Core Business, manufactures and sells laminated glass, tempered glass, and other high-value-added products in 15 countries worldwide.

Positioned as a Strategic Business, the Mobility Business is a world leader in advanced coating and glass-processing technologies, mainly used in the manufacture of cover glass for car-mounted displays. Going forward, we intend to further increase the sales of this business.

## Main Products

Laminated glass, tempered glass, smart glazing, 99% ultraviolet cut glass, infrared cut glass, privacy glass, acoustic glass, laminated side windows, water repellent door glass, snow- and ice-melting front glass, electrothermal defogging glass, printed glass antennas, embedded digital television glass antennas, glass for head-up displays, module assembly windows, and cover glass for car-mounted displays

## Business Strategy

### Automotive Business



**Yoshio Takegawa**

President of the Automotive Company

Global automobile production declined due to the COVID-19 pandemic in 2020 coupled with shortages in supplies of semiconductors and other components in 2021. Automotive glass shipments also decreased in these two years. Beginning from 2022, automotive production trended toward recovery, and this gradual improvement in production levels is expected to continue in 2023. In response to this business environment, the AGC Group aims to transform the business from “volume to value” in order to enhance asset efficiency. To this end, the AGC Group is pursuing three profitability improvement measures: revision of pricing policies, structural reform, and increase of high function and high-value-added products. As part of structural reform measures, we rightsized the workforces of the European headquarters and a plant in the Czech Republic and decided to close plants in Belgium and Germany, and we decided to carry out an approximately 30%

▶ Business Environment

**Opportunities**

- Business opportunities and increased materials-related needs stemming from changes in the market due to the emergence of the CASE\* trend
- Greater demand for high-speed communications and sensing technologies that enable autonomous driving
- Expansion of the use of materials that contribute to the electrification of automobiles
- Rising demand for comfortable vehicle interiors and for larger and more sophisticated vehicle mounted touch-panel displays

\* Connected, autonomous, shared & service, and electric

**Risks**

- Increase in use of alternative technologies and materials to reduce the burden on the environment, such as GHG emissions
- Delayed recovery of automobile production and sales due to the uncertainty of the global economic outlook and a shortage of semiconductors

▶ Main Tasks

	Business	Main Tasks
Core Business	Automotive Glass	<ul style="list-style-type: none"> <li>• Revise pricing policy and raise prices to appropriate levels</li> <li>• Improve profitability and asset efficiency and strengthen cash generation capabilities by making structural improvements, continuously implementing productivity improvements and cost reductions, and establishing an optimal production system</li> <li>• Increase sales of high-value-added products and improve the business portfolio</li> </ul>
	Mobility	<ul style="list-style-type: none"> <li>• Capture business opportunities by anticipating market changes driven by the CASE trend</li> <li>• Improve profitability by strengthening domestic operations and by increasing production capacity in relation to cover glass for car-mounted displays at the plant in China</li> </ul>

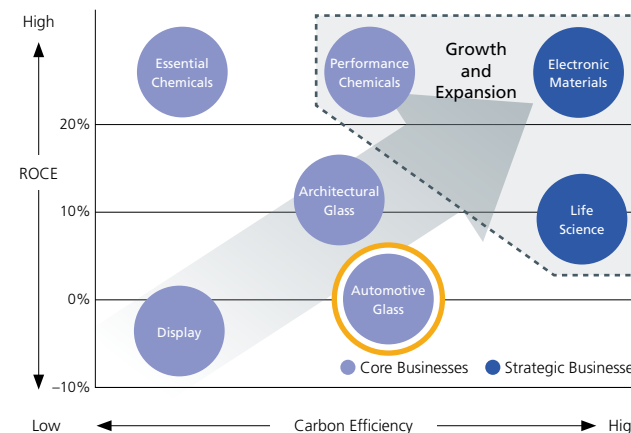
▶ Strengths

- Major manufacturing plants in 15 countries worldwide as well as networks and systems that enable the provision of high-quality products and services
- Comprehensive glass technologies such as coating and glass-processing as well as world-class, energy-saving glass production technologies
- The AGC Group's technology development and comprehensive capabilities, which integrate glass, chemicals, and electronics

reduction in production capacity in Europe by 2025, compared with that of 2021. At the same time, we are consolidating and streamlining production facilities by introducing highly efficient equipment worldwide. We will continue enhancing productivity and advancing cost improvement activities to increase asset efficiency even further. Also, we aim to enhance profitability and asset efficiency by accelerating the increase in advanced function, high-value-added products. In the automotive industry, a CASE-driven wave of change is gathering momentum. To capture this opportunity, the AGC Group is strengthening Mobility Business. The Group is promoting initiatives in fields where it can demonstrate its strengths—namely, displays, antennas, and sensors—enhancing competitiveness, and changing to more efficient businesses. With the increasing incorporation of information technologies into automobiles, demand is rising for car-mounted touch-panel displays that are larger and more complexly shaped and which offer more-advanced performance. In response, the AGC Group has developed the world's first cover glass for car-mounted displays with complex three-dimensional shapes. As well as meeting the technical specifications of such displays, this product realizes the high degree of design flexibility expected of glass and the level of safety

needed for automotive interiors. Thanks to these attributes, the product has claimed a large market share centered on high-end European automobiles.

To increase carbon efficiency, we are reducing CO<sub>2</sub> emissions by improving and developing our processes. We will achieve this by converting to highly efficient processes and through the full utilization of proprietary technology-related advantages in product development.



Fiscal 2022 Review

▶ Automotive Glass Business

Reflecting an easing of supply shortages of components centered on semiconductors, automobile production gradually picked up, and the Group saw shipments rise. Although revised pricing policies raised sales prices mainly in Europe, hikes in the prices of raw materials and fuel—particularly a steep increase in the price of natural gas—affected the business. As a result, the performance of the business did not reach pre-COVID-19 levels.

▶ Mobility Business

Shipments grew steadily due to the increasingly widespread adoption of cover glass for car-mounted displays. To meet such growing demand, we established a new plant in China to manufacture these products, which started up mass production in 2022.

Value Creation Case Study

In 2022, a new panoramic roof developed by AGC was adopted for Toyota Motor Corporation's Lexus RZ, which is the first dedicated BEV\*1 in the Lexus lineup and incorporates an array of leading-edge technologies.

Unprecedented Development Process Made Possible by Long-Standing Trust

The project began in 2018 with our proposed development of a light-control panoramic roof for the Lexus RZ with special Low-E\*2 coating that would achieve unmatched heat-insulating and heat-shielding properties. While conventional panoramic roofs let in light and create an open interior space, they are susceptible to solar heat and outside temperatures. Consequently, sunshades are required. However, sunshades prevent cabin occupants from fully enjoying a sense of openness. Our panoramic roof greatly reduces susceptibility to both heat and cold. Moreover, the roof's shade-less configuration helps reduce vehicle weight.

At the time of our proposal, the required technology had yet to be completed. Due to safety considerations, proposals for automotive products are normally submitted to customers after completing mass production technologies and product design. Nonetheless, waiting for completion risked missing an opportunity to incorporate a product into a Lexus, so we took the unprecedented step of submitting the development proposal when the technologies and design were incomplete. Despite this unprecedented process, Toyota was willing to incorporate our brand-new technologies and welcomed the proposal.

\*1 Battery electric vehicle

\*2 This is an abbreviation for low emissivity. Coating glass with a special metallic film reduces heat transfer caused by radiation and gives the glass heat-insulating and heat-shielding properties.

Realization Thanks to the AGC Group's Comprehensive Strengths

Although employing an unprecedented development process, the project had to meet the Lexus brand's exacting safety and reliability standards. Moreover, since creating the new panoramic roof called

for the combination of various different technologies, the project involved collaboration with both domestic and overseas operations and with outside partners. As a result, the project became a test of the AGC Group's comprehensive strengths. The aforementioned co-creation achieved high levels of safety, quality, cost, and delivery. Our product was therefore adopted for the Lexus RZ, the first dedicated BEV of the Lexus range.

Ambitious Initiatives Based on Insights into Customer Needs

While safety and environmental specifications for automobiles are becoming stricter, we must also cater to users' evolving needs in terms of driving performance and comfort. The unprecedented nature of the project's development process also presented challenges for Toyota, and we strongly felt that the company's employees came to see us as a reliable partner who was working with them to overcome difficulties.

Based on customers' goals as well as the explicit and implicit reasons for setting them, the AGC Group will identify how it can help customers and take on initiatives even if they entail challenges. Continuing to epitomize the brand statement *Your Dreams, Our Challenge*, we will communicate intensively with customers to gain insights into their needs.



**Jun Okawa**  
Sales Engineer, Toyota Global Unit



Major Challenges

- Unprecedented development process that includes establishment of both mass production technologies and product design in parallel
- Achievement of the high reliability levels required for the Lexus brand
- Collaboration among domestic and overseas operations and with outside partners



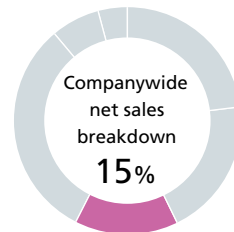


## Electronics Business

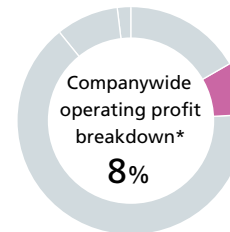
Under the Electronics Company's vision "STAY in FRONT with SDGs," we will continue to contribute to a sustainable society as a leading supplier of differentiated materials and solutions.

### Fiscal 2022 Performance

Net sales  
¥307.2 billion



Operating profit  
¥14.7 billion



\* As it recognized an operating loss, the Automotive Business is not included in the above Companywide operating profit breakdown.

### Business Overview

#### Display Business



##### Display glass

The Display Business has the second-largest shares\* of the global markets for glass substrates for thin-film-transistor (TFT) liquid crystal displays (LCDs) and glass substrates for organic light-emitting diode (OLED) displays. We are further heightening our global competitiveness by using proprietary manufacturing methods and advanced production technologies. At the same time, we are focusing on the development of next-generation display devices.

##### Main Products

Glass substrates for TFT LCDs and glass substrates for OLED displays

\* AGC estimate based on sales



##### Applied glass materials

Utilizing the distinctive thinness, lightness, and strength of specialty glass, we are constantly adding to our product lineup, which includes cover glass for smartphones, tablet computers, and other electronic devices as well as glass substrates for touch-panel displays.

##### Main Products

Specialty glass for chemical strengthening and high-quality soda-lime glass

### Electronic Materials Business



##### Optoelectronic materials

Such optoelectronic materials as infrared ray-absorbing glass filters for smartphones and digital cameras are the mainstays of this business.

##### Main Products

High refractive index glass substrates, diffractive optical elements and glass diffusers, glass ceramic substrates, optical planar devices, infrared ray-absorbing glass filters, aspherical glass lenses, and micro-lens arrays



##### Semiconductor-related products

Primarily manufacturing semiconductor-related products, this business offers synthetic fused silica glass, which has established a leading market share; extreme ultraviolet (EUV) lithography photomask blanks; high-purity silicon carbide (SiC) jigs; and chemical mechanical polishing (CMP) slurries.

##### Main Products

Synthetic fused silica glass, synthetic quartz, SiC, CMP slurries, EUV lithography photomask blanks, glass frit, glass pastes, and low-temperature hermetic sealing parts



##### Printed circuit board materials

This business mainly manufactures printed circuit board materials for high-performance applications, such as advanced driver-assistance systems and 5G systems.

##### Main Products

Copper-clad laminates and industrial polytetrafluoroethylene (PTFE) composite derivatives

Business Environment

Opportunities

- Rise in demand for infrastructure-related products indispensable for a data-driven society enabled by big data
- Growth in demand for products essential for the safety, security, and comfort of autonomous driving-based mobility

Risks

- Necessity of measures to reduce GHG emissions
- Market volatility in the electronics industry
- Hikes in fuel and raw materials prices

Main Tasks

	Business	Main Tasks
Core Business	Display	<ul style="list-style-type: none"> <li>• Respond to increasing demand in the Chinese market to build a long-term, stable business foundation</li> <li>• Change to production facilities suitable for the manufacture of large panels</li> <li>• Accelerate measures aimed at improving asset efficiency</li> </ul>
Strategic Business	Electronics	<ul style="list-style-type: none"> <li>• Expand value-added products including EUV lithography photomask blanks</li> <li>• Constantly generate new businesses</li> </ul>

Strengths

- Marketing capabilities and ability to offer customers solutions that include technical support
- Production technology for the efficient manufacturing of differentiated materials
- Technology development capabilities resulting from the establishment of an integrated system that extends from material design through to manufacturing
- Ability to develop businesses globally

Business Strategy



**Kenzo Moriyama**  
President of Electronics Company

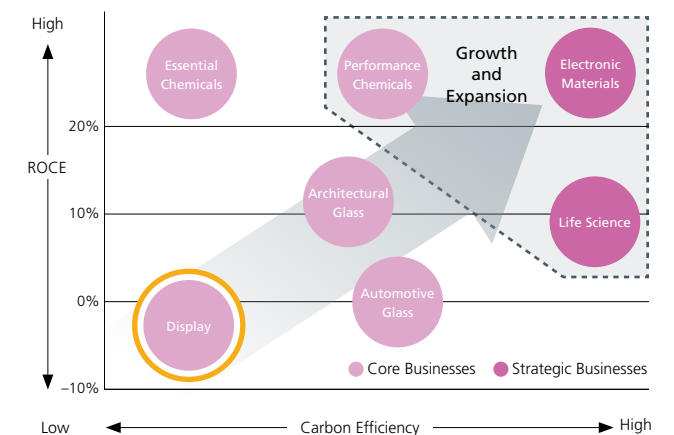
Display Business

In 2022, glass substrates for TFT LCDs saw a decline in demand due to the absence of the strong COVID 19-related stay-at-home demand of the last few years. However, long-term demand for these products is expected to grow steadily as television screens become larger. In particular, the market is likely to grow significantly

in China, so there, the AGC Group is actively developing supply capabilities in the country. Moreover, we will build stable business foundations by maintaining and developing strong relationships with major customers in China. Meanwhile, the improvement of asset efficiency is an urgent task. Accordingly, we will achieve a return on capital employed (ROCE) of 10% through withdrawal from sizes of glass substrates for LCDs that have low profitability, concentration on large glass substrates for LCDs, implementation of drastic structural reforms that include production line consolidation, and careful selection of capital investments.

Specialty glass for chemical strengthening, which boasts outstanding strength and scratch resistance, promises to grow stably in line with a medium- to long-term rise in smartphone unit sales. In addition, there remains significant demand for products that have greater strength, scratch resistance, and compatibility with the 5G next-generation telecommunications standard. With this in mind, we will focus on developing new products that meet this demand and aggressively expand businesses.

Aiming to improve carbon efficiency and reduce GHG emissions, we will switch fuels from heavy oil to natural gas, change from air combustion to oxygen combustion systems, and introduce electrical boosters.



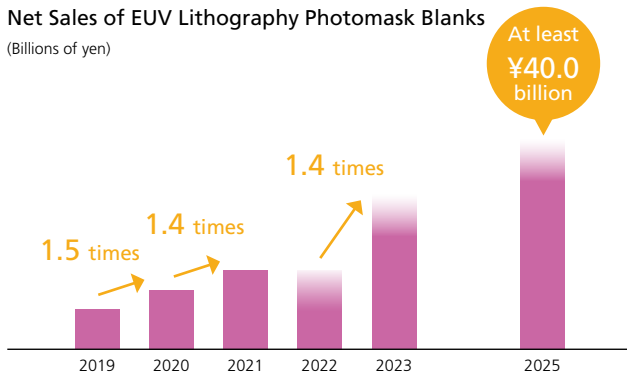
**Electronic Materials Business**

Given that it enjoys high levels of asset efficiency and carbon efficiency, the Electronic Materials Business will continue focusing on business growth and the development of high-value-added products.

As society rapidly digitalizes, demand for higher-performance, more-compact electronic devices is rapidly growing. Meeting this demand requires the further miniaturization of semiconductor chip circuits, which increases computational process speeds, data capacity, and integration. EUV lithography technology has attracted attention as it enables such miniaturization. From the turn of the millennium, the AGC Group began developing photomask blanks, which are processing materials needed for semiconductor production that use EUV lithography technology. Thanks to these efforts, we successfully met exacting quality standards and started up production in 2017. Since then, we have expanded our mass production system for EUV lithography photomask blanks in step with market growth. Going forward, we will continue increasing production capacity in stages, thereby lifting net sales of these products above ¥40.0

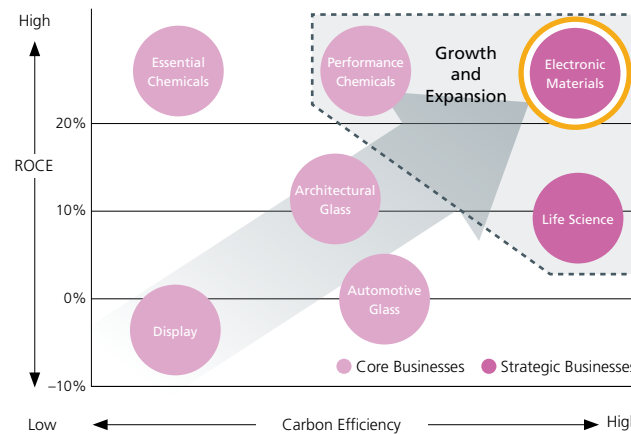
**Net Sales of EUV Lithography Photomask Blanks**

(Billions of yen)



billion in 2025. In addition to EUV lithography photomask blanks, we will accelerate the development of new high-value-added products to steadily grow operations for semiconductor-related products.

As for optoelectronic materials, demand is growing for glass filters that absorb infrared light and which are compatible with the multiple-lens, high-performance cameras of smartphones. Going forward, we will proactively develop new products for next-generation devices that are likely to follow on from smartphones to form markets with growth potential, such as glass substrates for eyewear devices that use augmented reality and mixed reality. In addition, printed circuit board materials businesses will expand operations that cater to the copper-clad laminates market. These laminates have significant growth potential for high-performance applications, such as advanced driver-assistance systems and 5G systems.



**Fiscal 2022 Performance**

**Display Business**

Shipments of glass substrates for LCDs declined due to demand for these products decreasing more than expected in the second half of the year. This decline, coupled with the effects of foreign exchange rates, hikes in the prices of raw materials and fuel, and higher depreciation associated with the start-up of new facilities, prevented the business from equaling its 2021 performance.

**Electronic Materials Business**

Although trade friction between the United States and China affected printed circuit board materials, business results improved year on year thanks to foreign exchange rates and steady shipments of optoelectronic materials and semiconductor-related products.

Value Creation Case Study

Light Detection and Ranging (LiDAR) is an essential optical sensor for the realization of fully self-driving cars. At AGC, we contribute to improvements in the safety of self-driving technologies by developing a wide range of optical components and materials that are used in LiDAR systems.

Diverse Optical Components and Materials Used in LiDAR

LiDAR acts as the “eyes” of self-driving cars, having the ability to detect in 3D any vehicles in front of the self-driving car and pedestrians walking around the car, as well as measure the distance to and shape of buildings and other objects and their relative positions. LiDAR systems project infrared laser light (irradiation light), which bounces off objects back to incident light detectors in the vehicle, allowing for the measurement of distances to and the shapes of objects. LiDAR systems are made of a diverse variety of optical components and materials that play various roles. Among these, AGC develops and manufactures lenses, diffractive optical elements (DOE), diffuser plates, optical filters, and cover glass.

Building a Development and Production Structure Able to Meet Customer Requirements

Optical components and materials used in automotive LiDAR systems must be developed in conformance with the specifications of electrical systems. Furthermore, more advanced and higher-quality optical components and materials require close technical coordination among materials, processing, and engineering divisions. AGC’s strength is its completely integrated in-house development and production structure, spanning from materials development to coatings and other optical engineering and processing technologies, in addition to the molding of glass and other materials. Thanks to its abundance of materials, processing, engineering, evaluation, and analysis technologies, AGC is able to effectively and efficiently develop and manufacture optical components and materials that satisfy the detailed requirements of its customers in the automobile industry.

Additionally, over a long period of time, AGC has built relationships based on trust in the automobile industry through the reliable supply of automotive glass and other products. The automobile industry requires a very high level of safety in each and every component and material used in a vehicle. One more strength of AGC is its ability to develop products that align with the aims of the automobile industry, thanks to its mature insight into the standards of quality and values peculiar to the automobile industry.

Contributing to Advances in LiDAR

In addition to LiDAR systems, technologies for self-driving cars include an array of optical sensors installed around a vehicle. Safety can be enhanced with more optical sensors per vehicle. Alongside their cost, LiDAR systems are also large pieces of equipment that stand out when installed in a vehicle, which detracts from the design of automobiles. To solve this problem, optical sensors must become smaller and more complex. At AGC, we are making more complex functionality in optical components and materials used in

LiDAR systems while reducing the number of lenses and integrating filter functionality. All of which has the objective of reducing the total number of optical components and materials in order to make LiDAR systems smaller. AGC is proud that it is able to take this approach to development thanks to its accumulation of materials, processing, and engineering technologies under one roof. We will continue to contribute to the evolution of LiDAR systems.



**Mitsuo Osawa**  
 Electronics Company  
 Electronic Materials General Division  
 Manager of Optical Component  
 Exploration Department,  
 Development Office

**Main Strengths**

**Relationships and Trust with Customers Across a Wide Range of Industries and Society**

- Relationships of trust built on reliable supply of automotive glass, etc.

**Five strengths accumulated since founding**

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**Proprietary Materials and Technologies**

- Materials, processing, and engineering technologies developed in an integrated in-house structure, from materials development to production

**Major Challenges**

- Advance functionality, increase quality, and lower cost of LiDAR systems
- Realize high level of safety demanded by automobile industry

**Creation of social value**

Contributing to the realization of safe and comfortable urban infrastructure

- Help improve safety of self-driving car technologies by developing optical components and materials that support advances in LiDAR

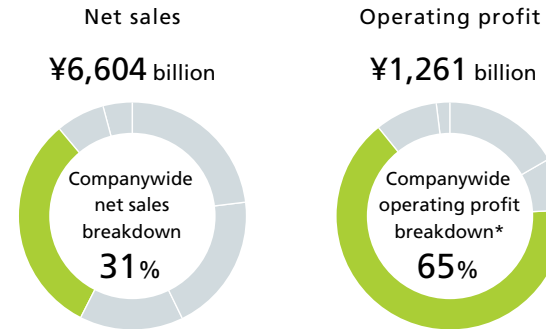




## Chemicals Business

Our Chemistry for a Blue Planet vision entails creating a safe, secure, comfortable, and environmentally friendly world with chemical technology. While realizing this vision, we will also sustain growth.

### Fiscal 2022 Performance



\* As it recognized an operating loss, the Automotive Business is not included in the above Companywide operating profit breakdown.

### Business Overview

#### Essential Chemicals

##### Chlor-Alkali Business



We contribute to society by stably supplying essential products to a wide range of industries. These include caustic soda and PVC (polyvinyl chloride), both of which are produced through the electrolysis of brine.

##### Main Products

Caustic soda, caustic potash, potassium carbonate, hydrochloric acid, sodium hypochlorite, liquid chlorine, VCM (vinyl chloride monomer), polyvinyl chloride, trichloroethylene, tetra-chloroethylene, methyl chloride, methylene chloride, chloroform, and epichlorohydrin

##### Urethane Business



We manufacture urethane-related products, which are used as materials for a variety of items that make life more comfortable, such as insulating materials and automotive seat cushions.

Polypropylene glycol (PPG), for example, is an essential raw material in polyurethane manufacturing. Our integrated production

line for PPG begins with PO (propylene oxide). This enables us to provide a stable supply of high-quality PPG with less impurities. The AGC Group also helps lower environmental burdens by providing HFO (hydrofluoroolefin) products that can be used as new, environment-friendly refrigerants and foaming agents.

##### Main Products

Propylene oxide, propylene glycol, and polyol

#### Performance Chemicals



The characteristics of fluorine atoms give organic fluorine compounds extremely useful physical and chemical properties, including excellent heat and chemical resistance as well as water and oil repellency. We leverage these properties to create many different high-performance products, such as Fluon® ETFE, which boasts the largest share\* of the global market for fluoropolymers. Beyond being used in the manufacture of a wide range of products—including automobiles,

aircraft, semiconductors, construction materials, electronics, and air-conditioners—our products play an important role in the creation of social infrastructure, urban spaces, and homes that are safe and comfortable.

\* AGC estimate based on sales

##### Main Products

Fluoropolymers, fluoroelastomers, fluoropolymer films, transparent amorphous fluoropolymers, fluoropolymer resins for coatings, water and oil repellents, fluorine-based electrolyte polymers for fuel cells, fluoropolymer ion-exchange membranes, fluorinated refrigerant gases, fluorinated solvents, fluorosurfactants, fluorinated coating agents, and fine silica

▶ Business Environment

Opportunities

Essential Chemicals

- Growth of the Southeast Asian market

Performance Chemicals

- Catering to needs related to energy conversion, including water electrolysis and storage batteries
- Catering to demand for ultra-high-frequency substrates and other products required for 5G and 6G communications

Risks

Essential Chemicals

- Trend toward carbon neutrality for electricity consumed in electrolysis

Performance Chemicals

- Trend toward the stricter regulation of fluorochemicals

▶ Main Tasks

Business	Main Tasks	
Core Businesses	Essential Chemicals	<ul style="list-style-type: none"> <li>• Capture growing demand and strengthen business foundations by expanding facilities in Southeast Asia, including Thailand</li> </ul>
	Performance Chemicals	<ul style="list-style-type: none"> <li>• Develop products that meet customers' increasingly advanced needs and capture niche demand globally</li> <li>• Develop products and process technologies in anticipation of environmental regulations and turn them into business opportunities</li> </ul>

▶ Strengths

Essential Chemicals

- Strong market presence in eastern Japan and Southeast Asia established through a regional concentration strategy as well as sales and logistics networks built up in these regions over many years
- Collaboration among sites in Indonesia, Thailand, and Vietnam

Performance Chemicals

- Development of mass production technologies and high-performance materials based on proprietary organic synthesis technology
- Global operation of manufacturing, marketing, and technical service sites

Business Strategy



**Masao Nemoto**  
President of Chemicals Company

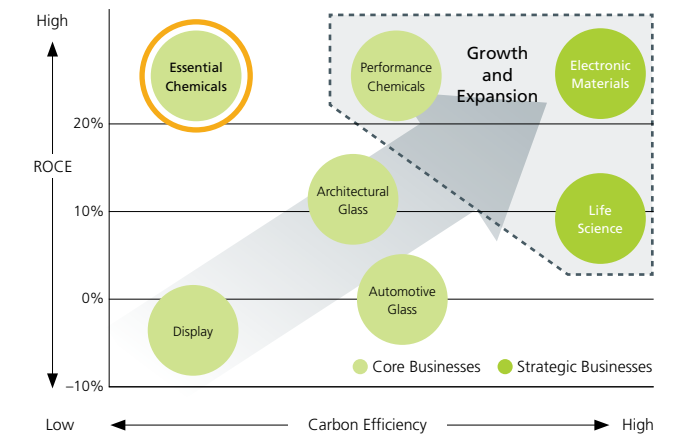
Essential Chemicals

Eastern Japan and Southeast Asia are key markets for the Essential Chemicals Business. Through a strategy of concentrating on these regions, the business is strengthening customer services and competitiveness.

In Japan, the Chlor-Alkali Business will benefit customers and society by providing stable supplies of various essential products, such as caustic soda, sodium bicarbonate, and sodium hypochlorite, which is a disinfectant for drinking water. Meanwhile, the Urethane Business will transform by shifting its product mix from general-purpose products toward specialty offerings. By doing so, this business will provide new solutions that assist customers in addressing environmental burden reduction and other tasks.

Overseas, we will focus on advancing businesses in Southeast Asia, where strong economic growth is expected to continue. By providing stable supplies of products such as caustic soda and PVC, we will contribute to social infrastructure expansion and enhancement, regional economies, and improvement in the living conditions of emerging countries. We have manufacturing sites in Indonesia, Thailand, and Vietnam, and we will continue increasing production capacity to meet the region's burgeoning demand. Despite some market fluctuations, in Southeast Asia the Chlor-Alkali Business has established robust, highly profitable

business foundations due to changes in the market structure, such as limited inflows of products from China and the United States. In this region, we will continue focusing on increasing capacity and growing businesses to maintain and improve asset efficiency.

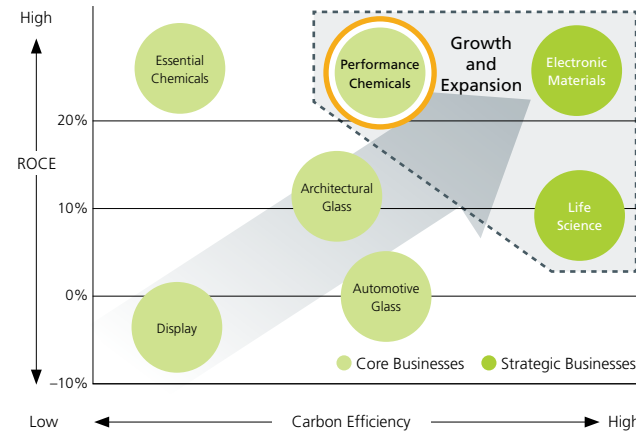


Also, through the utilization of in-house-developed ion-exchange membrane FORBLUE™ FLEMION™ and new production technologies, the Chlor-Alkali Business is adopting energy-saving processes that have world-leading levels of non-toxicity and environment friendliness. The business will reduce its GHG emissions even further by lowering the electricity coefficient for purchased electricity, switching to renewable energy at sites, purchasing renewable energy certificates, and using biomass fuels for in-house thermal power generation.

**Performance Chemicals**

The Performance Chemicals Business develops differentiated, high-performance products by leveraging the advantages of the AGC Group’s proprietary organic synthesis technology. At the same time, the business pursues a global niche top strategy, which focuses strongly on clearly defined targets to secure large market shares in niche fields. To date, the priority fields we have targeted include aerospace, transportation equipment, and semiconductors—all of which require advanced performance and uncompromising quality. We will use our technological prowess to meet the needs of customers in such leading-edge fields and heighten our competitiveness and profitability. Fluorinated materials, which have low transmission loss, are attracting attention due to their suitability for 5G communications

systems and other next-generation high-speed communications equipment expected to become ubiquitous. In this field, the Group will focus on developing high-performance products that meet customer needs. In addition, we will increase supplies of products that help reduce environmental burden, including the FORBLUE™ FLEMION™ ion-exchange membrane for brine electrolysis and AMOLEA™ next-generation environment-friendly refrigerants and solvents.



**Fiscal 2022 Performance**

**Essential Chemicals**

Although sales were up year on year thanks to firm market conditions for caustic soda and other products as well as the effect of foreign exchange rates, profits declined due to high raw materials and fuel costs.

**Performance Chemicals**

Sales and profits surpassed those of 2021, reflecting a significant rise in shipments of fluorinated products—mainly for semiconductor-related applications—and the effect of foreign exchange rates.

Value Creation Case Study

For a variety of products, Epichlorohydrin (ECH) is widely used as an essential raw material for epoxy resins used in automotive, protective coating, and electronics. In 2022, the Group company Advanced Biochemical (Thailand) Co., Ltd., launched a new brand name EPINITY™ for the ECH made entirely from renewable raw materials and which the company has been producing since 2012.

Launching a New Brand

I was responsible for leading the launch of the EPINITY™ brand. In launching the new brand, we had to complete an array of tasks in a limited time—from choosing a brand name, logo design, and registering the trademark through to creating a product website and advancing sales activities. Although I had never been involved in a new brand launch before, I sought suggestions for the brand name and logo design from many Group employees, enlisting their cooperation in these and other ways as we moved forward with the project. Thanks to the unwavering commitment and concerted efforts of team members, we were able to accomplish all tasks within the originally envisioned time frame. Creating the product website was a particularly challenging task as there were many new things to learn. Nonetheless, I am happy to report that the website has been well received by customers, Group employees, and business partners who could turn out to be our new customers.

Pursuing Differentiation

The most important task when launching a new brand is differentiation from other products. Fortunately, we have been working for more than 11 years as a pioneer in providing sustainable bio-based ECH to customers and end-users. We are also certified by extensive sustainability standard certifications. EPINITY™ is produced from renewable raw materials through sustainable production, enabling up to 67% GHG emissions reduction compared to conventional products. Its main raw material is glycerin derived from vegetable

oil, including palm oil. Advanced Biochemical (Thailand) is the only bio-based ECH manufacturer that has obtained certification from the Roundtable on Sustainable Palm Oil (RSPO).\* This is one of the major differentiators for EPINITY™ to support the use of sustainable palm oil along the value chains and to serve customers' need for RSPO-certified ECH. The differentiation of EPINITY™ has been recognized worldwide by customers' trust, confidence in long-term relationship, and the global presence of the AGC Group.

\* A non-profit organization that promotes the production and use of sustainable palm oil

Remaining the First Choice of Customers

The launch of the new EPINITY™ brand is a major step toward enhancing Advanced Biochemical (Thailand)'s position as a leading manufacturer of sustainable bio-based ECH. EPINITY™ helps customers and downstream users to sustainably grow and to

achieve their environmental targets. To remain the first choice of customers, we must continue improving to provide a product with an even lighter carbon footprint and to increase our production capacity to support the growing demand.



**Pan-usa Kongmunwattana**  
Sales & Marketing ECH Division Manager,  
Advanced Biochemical  
(Thailand) Co., Ltd.

**Main Strengths Utilized**

**A Corporate Culture that Encourages Ambitious Initiatives**

- Strong market presence in Southeast Asia and a sales and distribution network built up over many years

**Five strengths cultivated since our founding**

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**Production Technology Capabilities and Process Development Capabilities**

- Ability to develop innovative manufacturing processes that only use renewable raw materials

**Major Challenges**

- Launch of a new brand
- Differentiation from other products

**Creation of Social Value**

Contributing to the realization of safe and comfortable urban infrastructure

- Provision of materials required by a wide range of industries

Contributing to the realization of a sustainable global environment

- Reduction in global warming potential of 67% compared with conventional products



# Life Science Business

We will contribute to bettering the world, by providing high-quality life-science related services & products, that require high-level expertise & competence. We will enrich society by utilizing our expertise in the life science field to provide high-quality products and services.

## Business Overview



Worldwide, we are expanding contract development and manufacturing organizations (CDMO), which develop processes for and manufacture pharmaceuticals and agrochemicals.

In addition to synthetic pharmaceuticals and agrochemicals that leverage organic synthesis technology fostered in the Performance Chemicals Business, the Life Science Business is focusing on biopharmaceuticals, demand for which has grown globally in recent years, and leading-edge cell and gene therapy fields. With business sites in Japan, Europe, and the United States, we will contribute to the health, peace of mind, and comfort of people around the world by providing high-quality services that meet the needs of customers in each market.

### Main Products

Synthetic pharmaceuticals, agrochemicals, and biopharmaceuticals

## Business Environment

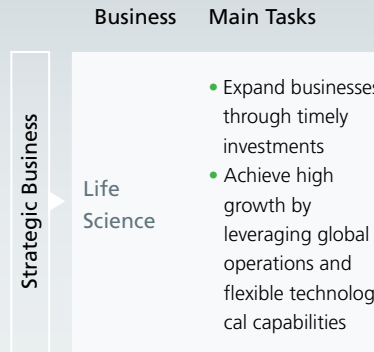
### Opportunities

- Meeting the needs of a health-focused, long-lived society
- Addressing food problems
- Increase in the contracting of pharmaceutical and agrochemical development and manufacturing

### Risks

- Shortage of personnel due to market expansion
- Shortage of materials

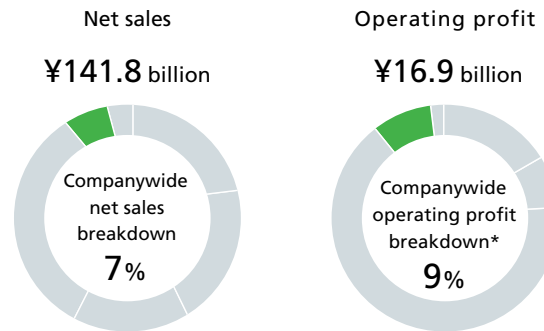
## Main Tasks



## Strengths

- Globally integrated network that meets customer needs through sites in Japan, Europe, and the United States
- Extensive inspection and commercial pharmaceutical manufacturing experience based on advanced quality assurance and technological development capabilities
- Ability to use leading-edge technologies to resolve development and manufacturing issues

## Fiscal 2022 Performance



\* As it recognized an operating loss, the Automotive Business is not included in the above Companywide operating profit breakdown.

## Business Strategy

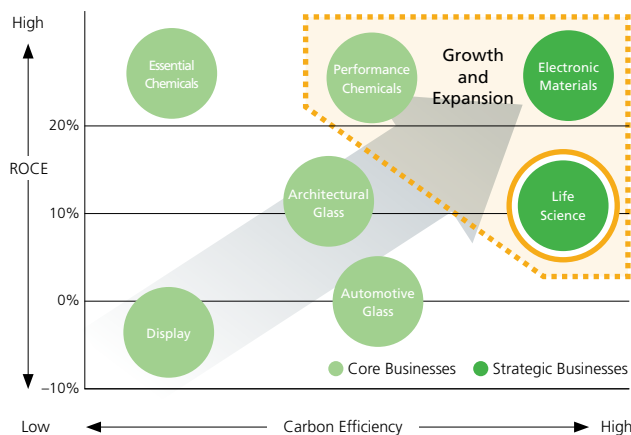


**Noriyuki Komuro**  
President of Life Science Company

Over the medium to long term, the global CDMO market is expected to continue growing due to the increase in aging populations, advances in medicine, the need for heightened agricultural productivity to provide a growing global population with reliable food supplies, and the acceleration of a trend toward the contracting of development and manufacturing by pharmaceutical and agrochemical companies. In this market environment, AGC is expanding businesses on a global scale by building on the customer trust it has cultivated and the Company's track record as a CDMO.

In regard to synthetic pharmaceutical and agrochemical CDMO, AGC is achieving differentiation through synthesis process development capabilities and high productivity, both of which are backed by advanced organic synthesis technology. With respect to our role as a biopharmaceutical CDMO, we were the first to market single-use bioreactors for mammalian cell cultures, which are suited to small-lot production and have been seeing increased demand due to progress in the rare disease field. We are focused on building a globally integrated development and manufacturing network based in Japan, Europe, and the United States, which can flexibly meet customer needs. In addition to the cell and gene therapies on which we have already begun working, we will continue taking on the challenge of developing regenerative medicine and other new technologies and modalities that are still in the early stages of development.

As the Life Science Business is based on a highly carbon-efficient business model, growth of the business is expected to improve the carbon efficiency of AGC as a whole. This business will further enhance asset efficiency—in other words, return on capital employed (ROCE)—by maintaining high utilization rates over the medium to long term through the maintenance of an optimal balance between commercial projects that attract continuous, stable flows of orders and development projects that promise to grow in scale or achieve commercialization.

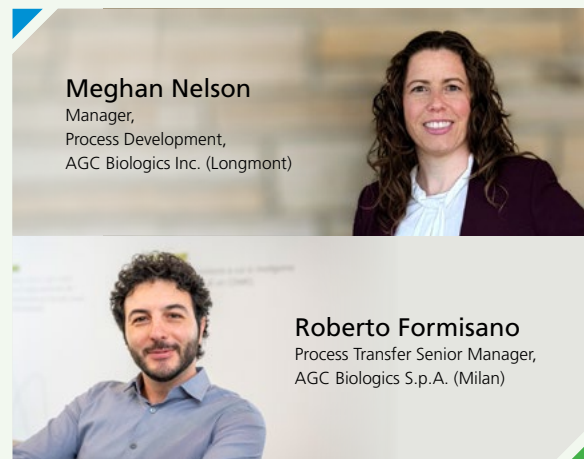


## Fiscal 2022 Performance

### Life Science Business

Although increases in contracts received by synthetic pharmaceutical and agrochemical CDMO and biopharmaceutical CDMO grew sales compared with those of 2021, operating profit edged down year on year due to higher upfront costs arising from capacity ramp-ups.

### Value Creation Case Study



**Nelson** After joining AGC Biologics in 2021, I was involved in introducing a suspension facility to the Longmont site. In my career up to this point, I had gained some experience of viral vector production, which gave me an overall grasp of the steps involved in introducing the facility. Nonetheless, when actually receiving technical support from the Milan site, we had to solve various problems. Tackling these problems required in-depth communication with coworkers in Milan. Communication was challenging because of language and time zone differences. However, Roberto and everyone at the Milan site communicated with us in English, which was a great help. Due to the time zone difference, we could not hold meetings often. So, to use valuable meeting time efficiently, we ensured that the meetings were not just question-and-answer sessions but also forums for exchanging and discussing opinions.

In 2022, AGC Biologics increased its production capacity as a provider of CDMO services for gene and cell therapies by introducing a new adherent and suspension facility suitable for the mass production of viral vectors\* based in the Longmont site in the United States. The Longmont site increased capacity thanks to technical support from the Milan site, which had already introduced a similar facility.

\* A vector is used to carry the target gene into a cell. Among vectors, viral vectors are those using modified, cultured viruses.

**Formisano** I was engaged in manufacturing process development for biotech and pharmaceutical companies before joining AGC Biologics in 2020. In my capacity as the process transfer manager at the Milan site, I was involved in the transfer of technology to the Longmont site. One technical challenge that arose was the difference in elevation between the two sites. Milan is about 100 meters above sea level, while Longmont is about 1,500 meters above sea level. We had to make adjustments to achieve the same products and quality because the solubility of gases dissolved in the culture solution differs greatly at different

elevations. This is just one example. As production of biopharmaceutical products are delicate and susceptible to the external environment, technology transfer gives rise to a range of problems. Ultimately, the products are used by patients. For this reason, we must ensure the efficacy and safety of products and take many different factors into consideration.

**Nelson** At the Longmont site, we were able to devote all of our energy to the introduction of the adherent viral vector platform. However, the Milan site personnel had a heavy workload because they were also working on other projects. We are extremely grateful for their cooperation.

**Formisano** I believe that this kind of technology transfer between sites will be very important in heightening the AGC Group's competitiveness. Currently installing new facilities, the Milan site is receiving technical support from the Copenhagen site of AGC Biologics. Drawing on the know-how of other sites saves time and labor, while exchanges with coworkers from other sites help personnel acquire a variety of knowledge. In other words, technology transfer initiatives are mutually beneficial.

**Nelson** I agree. By involving more people who have different types of experience and knowledge, we will be able to realize manufacturing processes that are more efficient and productive. In the United States, our sites in Seattle and Boulder have different areas of technical competence. Consequently, our interactions with these sites are really beneficial.

**Formisano** Yes, connections between sites are very important. Face-to-face communication is a particularly good way of giving personnel a real sense of belonging to the same corporate group. I think that cooperation based on such a feeling of solidarity is necessary to overcome various problems and accomplish technology

transfers. When facing supply chain problems during the COVID-19 pandemic, sites minimized the impact by maintaining close contact with other sites and making adjustments in line with each other's raw materials needs.

**Nelson** Our on-schedule accomplishment of the technology transfer from the Milan site gave me renewed pride in being a member of the AGC Group. The AGC Group has several track records in commercial phase manufacturing while there are still not many commercial cell and gene therapy drugs in the world. Our outstanding track record and cutting edge technology are highly evaluated by our customers. To continue to be a market-leading CDMO in the field of biopharmaceuticals including cell and gene therapies, the AGC Group must further develop the tripolar system centered on Japan, the United States, and Europe

that enables cooperation among sites worldwide. We are ready to provide unceasing support if there is anything we can do to help develop this system.

**Formisano** I feel the same way. Our common goal is to provide patients around the world with optimal therapies. As Meghan said, we should realize this goal by working together with other sites that have different facilities and fields of expertise, and by making the best possible use of our experience and expertise.

### Main Strengths Utilized

#### Production Technology Capabilities and Process Development Capabilities

- Milan base's platform technologies for cell processing and vector production

#### Five strengths

cultivated since our founding

P.23



#### Globally Integrated Management that Brings Together Diverse Personnel

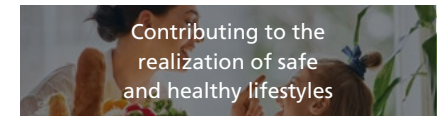
- Cooperation among bases based on a tripolar system encompassing Japan, the United States, and Europe



#### Major Challenge

- Transfer of technologies from Milan to Longmont

### Creation of Social Value



Contributing to the realization of safe and healthy lifestyles

- Contributing to patients worldwide by providing CDMO services for gene and cell therapies



# Ceramics Business

We aim to contribute energy-saving & resource-saving, and high levels of efficiency to protect the global environment through ceramics materials and products of AGC Ceramics Co., Ltd., for the supply to high-temperature equipment as well as functional products that utilize inorganic materials.

## Business Overview



Fused cast refractories for glass-melting furnace crowns



Monolithic refractory for industrial furnaces



Fine ceramics with excellent heat and corrosion resistance for the iron, aluminum, and electronics fields

Though seldom seen, our mainstay products play a crucial role in the infrastructure of daily life. As well as being integral to the facilities of companies in such key industries as iron, cement, and glass manufacturing, AGC products are essential for the inner walls of power plants that have boilers and municipal waste incinerators. Moreover, we offer an array of high-performance products that save energy and resources and improve efficiency.

## ■ Main Products

Fused cast refractories, monolithic refractories, bonded refractories, fine ceramics, and a ceramics molding agent for 3D printers

## ▶ Business Environment

### Opportunity

- Stability of the refractory market and the potential of high-performance ceramics

### Risk

- Change in the manufacturing processes of industries that utilize refractories for high-temperature equipment as these industries move towards the goal of a carbon-free society

## ▶ Strengths

- Extensive lineup of products with reliable quality accumulated since we began manufacturing refractory bricks for glass furnaces in 1916
- Proactive efforts in new material development, application proposal, design solutions, construction engineering provision, and support for customers' operations

## Business Strategy



**Masaru Ota**

President of AGC Ceramics Co., Ltd.

We pursue an “organizational ambidexterity” approach to business management based on refractories and high-performance ceramics. Further, the Ceramics Business aims to increase asset efficiency through business portfolio revision and clarification and the appropriate allocation of management resources.

We are expanding our investment in the refractory market, which is an indispensable product in modern society, making this market very secure. We not only develop, manufacture, and sell products as a manufacturer but also focus on supporting customers' facilities during their life cycles through the provision

of design solutions, construction engineering, and operational support. Also, we will increase the efficiency of operations by introducing smart manufacturing processes. At the same time, we will collaborate with our sites in China and our global network to strengthen supply chains. Meanwhile, the efforts of the Ceramics Business to explore and create new value in the field of high-performance ceramics, which includes fine ceramics and 3D molding (additive manufacturing), promise to generate significant growth. With a view to expanding sales of the 3D printing material BRIGHTORB™, we established CERAWEL TECHNOLOGY CO., LTD., in 2022 as a joint venture in China. To accelerate its progress, the business will utilize all the AGC Group's resources and promote open innovation.

Increasingly, industries that use high-temperature equipment are expected to contribute to the creation of a sustainable society by innovating their manufacturing processes. By offering refractories suited to new processes and providing peripheral engineering services, we will benefit society and turn changes into opportunities for growth.

With quality, integrity, and pride as watchwords, we are committed to being a reliable partner for our customers.





# New Business Creation

## Initiatives of the Business Development Division

Through the tireless pursuit of ambitious innovation from a farsighted perspective, the Business Development Division will propose and advance new businesses, thereby enabling the AGC Group to realize sustainable business growth and address social issues.



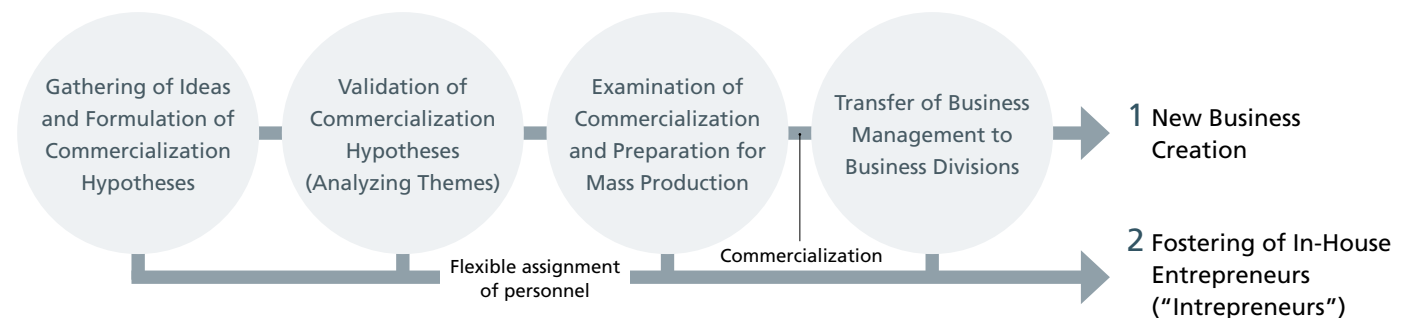
### Missions of the Business Development Division

In 2011, the Business Development Division was established as a dedicated organization for the creation of businesses that allow the AGC Group to take maximum advantage of its comprehensive strengths in business areas and regions with considerable growth potential. The division has two missions: new business creation and human resource development. Further, the purpose of the former is to create businesses that will sustain the Group's growth. To this end, the business creation process includes exploring and selecting ideas for new businesses, formulating commercialization hypotheses and conducting market validation of them, developing businesses for transfer to business divisions, and transferring business management to these divisions. As for the development of human resources, through flexible assignment the Business Development Division increases the number of personnel who gain experience of business creation. This approach simultaneously realizes the "incubation" of businesses and personnel while also fostering numerous in-house entrepreneurs, who we refer to as "intrepreneurs."

### Collaboration with Business Partners

As well as analyzing macro trends to discover promising ideas, the Business Development Division analyzes the commercialization of projects that would be difficult for in-house companies to analyze. In preparing proposals for and advancing new businesses, the division collaborates not only with various

### Two Missions



organizations in the Group—such as in-house companies and the Technology General Division—but also with external partners, including educational institutions and venture capital companies. Moreover, the division develops new businesses on a global scale by partnering with AGC Business Development Americas and AGC (China) Holdings Inc., the Group's sites in the United States and China, respectively.

### Achievements and Outlook

Through the aforementioned activities, the Business Development Division has incubated new Strategic Businesses and then transferred their management to in-house companies. Currently, these businesses manufacture such products as biopharmaceuticals, EUV lithography photomask blanks, cover glass for car-mounted displays, and copper-clad laminate substrates for high-speed communications. At the same time, the division is proposing and advancing new businesses related to the Electronics, Mobility, and Life Science businesses, which are the Group's Strategic Businesses.

Through the tireless pursuit of ambitious innovation from a farsighted perspective, the Business Development Division will propose and advance new businesses, thereby enabling the AGC Group to realize sustainable business growth and address social issues.

# Management Foundations Supporting Growth

Here, we focus on initiatives that are cementing our management foundations.

- 66 Technology and Innovation
- 76 Human Resources
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- 103 Board of Directors, Audit & Supervisory Board Members, and Executive Officers



# Technology and Innovation

We will forge ahead with initiatives to create new value for tomorrow's society and customers by realizing innovations for the coming century and providing differentiated materials and solutions.



## Technology Development Strategies and Systems

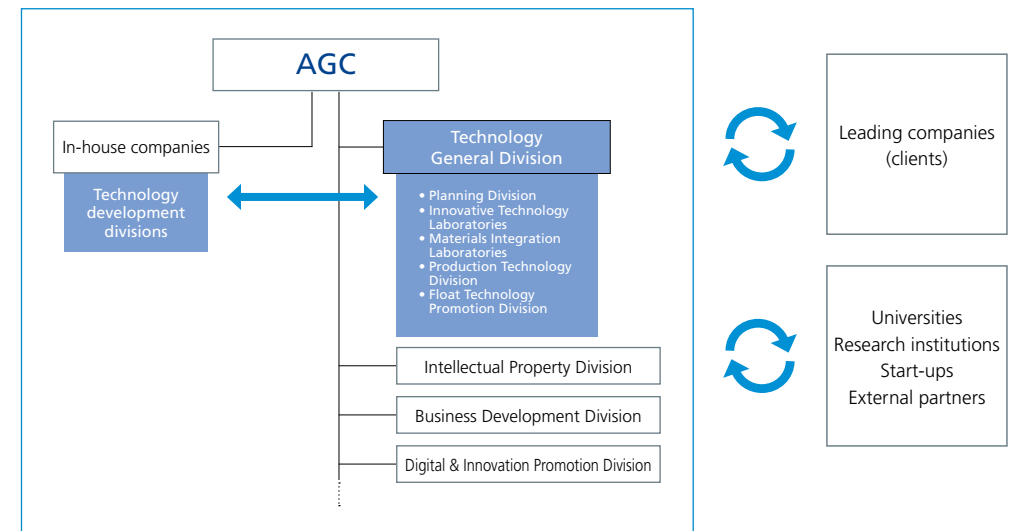
With the aim of realizing the long-term management strategy Vision 2030, the AGC Group's Technology General Division is advancing technology development and innovation to formulate materials and solutions that create value. In accordance with specific Groupwide strategies set out in the medium-term management plan **AGC plus-2023**, the division is pursuing three core strategies—*ambidextrous development*, *open innovation*, and *digital transformation*—each of which will be highlighted in this section. Based on these strategies and with its sights set on the future needs of both customers and a sustainable society, the division will continue taking on the challenge of creating new technological value.

The Technology General Division has two key goals, both of which are included in **AGC plus-2023**. The first is the reinforcement of Core Businesses and the development of Strategic Businesses. To this end, the division is exemplifying the *ambidextrous development* approach by allocating finite development resources in a balanced manner and helping the Group transform its business portfolio.

The second key goal is contributing to the creation of a sustainable society. We will achieve this goal by reducing GHG emissions through the development of manufacturing process technologies and through the development of products that contribute to carbon neutrality. In addition, we will develop recycling and energy-saving technologies.

To reinforce Core Businesses and develop Strategic Businesses, the Technology General Division is collaborating with the development departments of in-house companies, the Business Development Division, and the Digital & Innovation Promotion Division. The Technology General Division's Planning Division is responsible for formulating and advancing technology strategies to achieve the aforementioned key goals. This division also acts as a liaison between the Technology General Division and in-house companies and promotes open innovation initiatives with external parties. Further, the remaining four divisions and laboratories of the Technology General Division work together to develop materials, processes, equipment, and float technology. In converting created value into social and economic value, intellectual property, technology, and other intangible assets are becoming increasingly important. For this reason, the Technology General Division is working in close collaboration with the Intellectual Property Division.

## AGC's Technology Development System



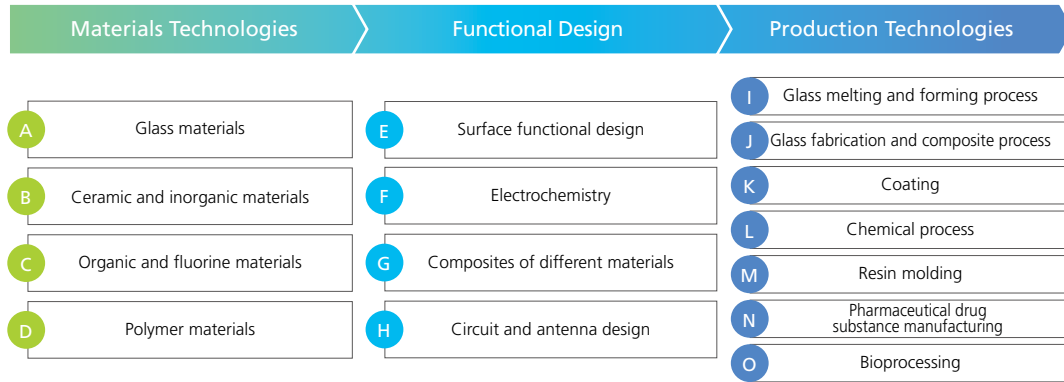
## AGC's Core Technologies

AGC began by manufacturing flat glass. Since then, we have consistently reflected the changes in each era by providing value to society through the marketing of many different materials and solutions for motorization, IT development, and environmental issues. As a result, we have established technologies related to a wide range of materials—from inorganic and organic materials through to biomaterials. We have fostered, as core technologies, functional design technology, which combines our diverse technologies to realize even greater functionality, and production technology, which facilitates the stable, highly efficient manufacture of quality products. At the same time, AGC has accumulated and evolved common basic technologies, supporting technology development and product manufacture.

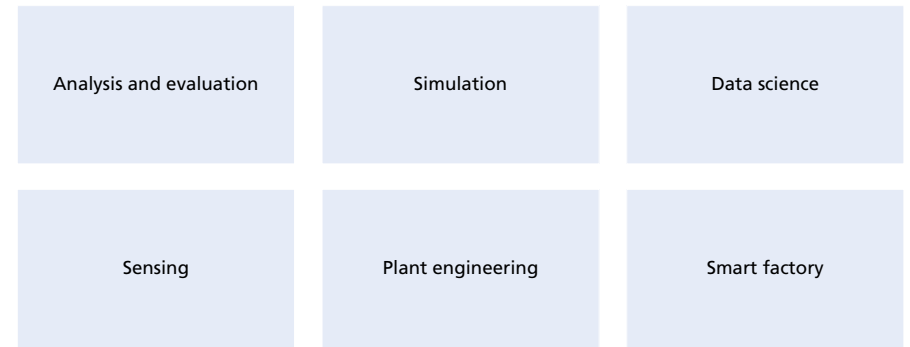
The aforementioned technologies remain integral to leading-edge AGC projects tasked with the creation of new social and economic value.

AGC's Core Technologies

Core Technologies

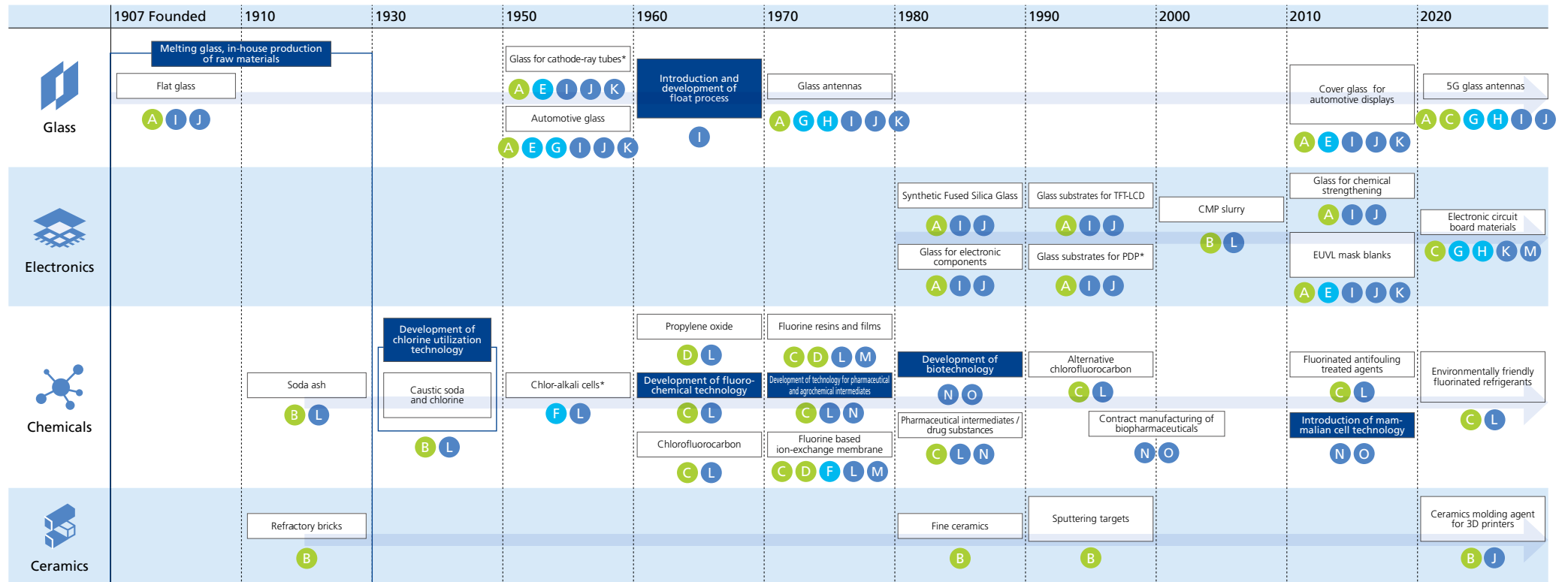


Common Basic Technologies



History of Our Core Technologies

\* Business discontinued



## Three Core Strategies of Technology Development

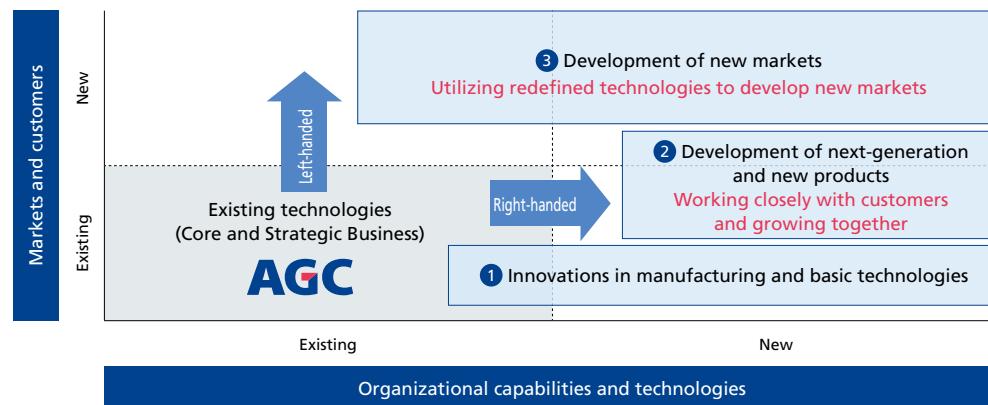
# 01. *Ambidextrous Development*

“Organizational Ambidexterity” refers to business management that balances the continuous improvement of Core Businesses (exploitation) with experiments and activities focused on new businesses (exploration). *Ambidextrous Development* incorporates this management approach into technology strategies.

“Right-handed” development refers to (1) the innovation of existing production technologies and basic technologies, and (2) the development of new products together with our customers. Working closely with customers and catering to their needs, this type of development uses a forecasting approach in which current conditions are the starting point of projections and improvement measures. From the perspective of organizational ambidexterity, “right-handed” development refers to the development of technologies that will strengthen existing businesses through productivity improvement and the creation of new products.

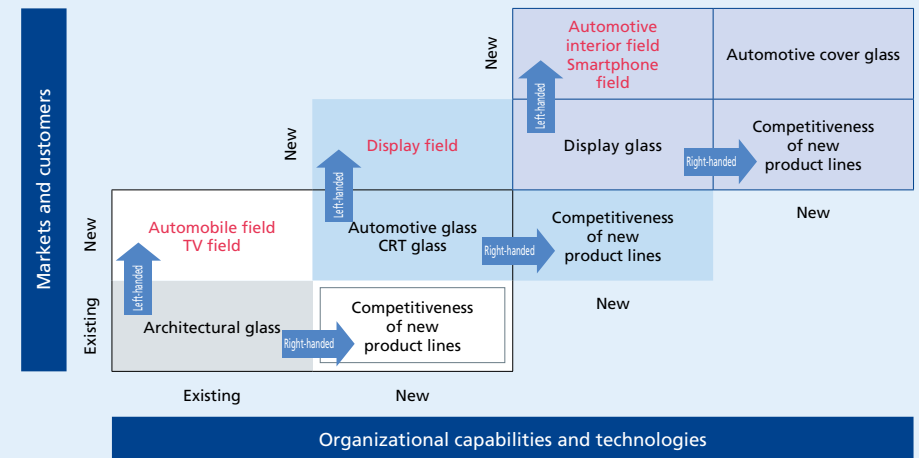
“Left-handed” development, by contrast, (3) is based on backcasting, which begins by anticipating possible future trends and then undertakes the initiatives and new business creation needed to adapt to these predicted trends. In other words, the goal of left-handed development is to open up new markets by redefining existing production technologies and fundamental technologies. From a business perspective, it means the development of technologies that lead to the creation of new Strategic Businesses in such areas as mobility, electronics, and life science.

Both types of development are important. The AGC Group aims to grow and evolve by using “right-handed” development to enhance the competitiveness of existing businesses, while building the future through “left-handed” development. Success will depend on our ability to pursue *ambidextrous development* by maintaining a balance between both approaches.



### Examples of Ambidexterity in Glass Businesses

The history of AGC’s Glass Segment provides some simple examples of *ambidextrous development*. “Right-handed” development entails strengthening Core Businesses and other existing businesses. An example of this is the development of Low-E double-glazing glass and other new, highly functional products by using architectural glass production technologies and basic technologies as the foundations and then combining core technologies for coating and composites. Meanwhile, the creation of new businesses and Strategic Businesses is regarded as “left-handed” development. For instance, our adaptation of flat glass technology to develop automotive glass and glass for cathode-ray tubes enabled forays into the automobile and television fields.



## Three Pillars of Technology Development

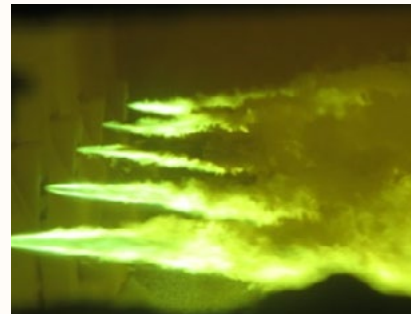
Innovations in Production and Basic Technologies  
Reducing CO<sub>2</sub> Emissions from Glass Furnaces**Ammonia Combustion Initiative**

In glass production, fossil fuels such as natural gas and heavy oil are used as fuel in raw materials melting processes. Consequently, the development of combustion methods that use environment-friendly fuels is a pressing task. As part of its efforts to develop innovative production technologies, AGC is utilizing open innovation.

The Company has been selected by the New Energy and Industrial Technology Development Organization (NEDO) as a contractor on a joint project tasked with developing fuel ammonia combustion technology for industrial furnaces. AGC is advancing this joint development project, which began in December 2021 and ends in March 2026, alongside such outside partners as Taiyo Nippon Sanso Corporation, the National Institute of Advanced Industrial Science and Technology, and Tohoku University.

The project is focusing on ammonia, which does not produce CO<sub>2</sub> when combusted. Ammonia is already widely used as a fertilizer and an industrial raw material and has similar storage and transportation properties to those of propane. The project entails the installation of an ammonia-oxygen combustion burner at the architectural glass production facility of the AGC Yokohama Technical Center, which will conduct demonstration tests of ammonia combustion technology. As well as evaluating the effects of ammonia combustion on glass and the materials that comprise melting

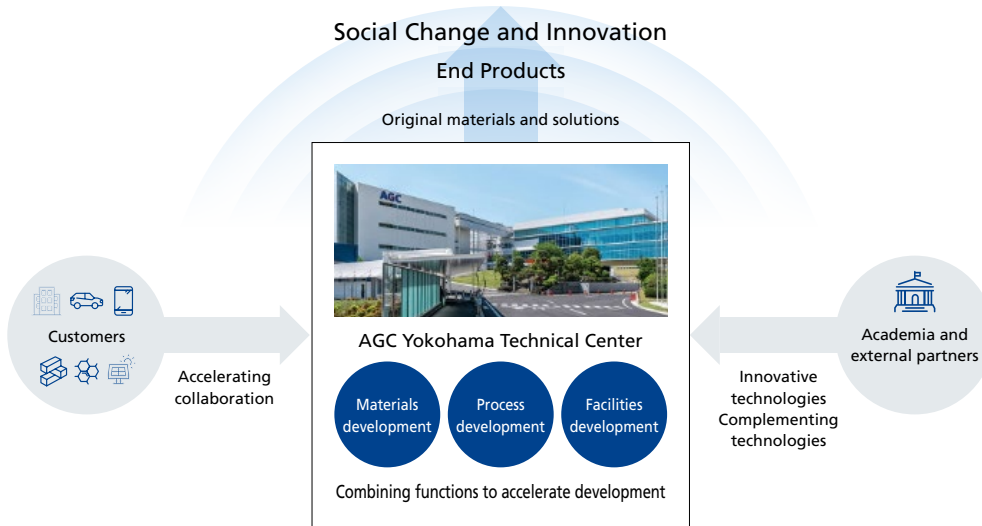
furnaces, AGC and its partners aim to develop a burner that meets environmental standards and which can be introduced in earnest to glass-melting furnaces. Moreover, we will conduct analysis with a view to introducing this technology to manufacturing processes not only for glass but also for other materials, including steel and aluminum.



Three Pillars of Technology Development

## 02. Open Innovation

Social issues have become increasingly complex in recent years due to the accelerating pace of social change. Customer needs are also becoming more sophisticated and diverse, leading to the emergence of issues that are challenging for AGC to solve in a timely manner solely through its own development efforts. This is reflected in the ever-growing importance of open innovation as the basis for collaboration with external partners.



AGC approaches open innovation along two axes. The first is collaboration with universities, other academic institutions, and startups. These partnerships aim to develop innovative technologies and technologies outside of AGC’s fields of expertise. We are tackling a range of complex issues through large-scale partnerships with various institutions, including the University of Tokyo, the Tokyo Institute of Technology, and Nagoya University. Our second axis is to develop new products together with our industry-leading customers by utilizing new technologies, materials, and solutions.

In 2020, we established a research wing within the AGC Yokohama Technical Center (YTC). This allowed us to create a seamless structure, which encompasses all stages from the development of materials and processes through to the development of equipment technologies, by bringing together development functions that had previously been based at two separate locations. The new research wing also includes the AGC Open Square (AO), which we established to provide a space for collaboration and accelerated open innovation with external partners. With

“connect,” “create,” and “materialize” as key concepts, we are actively utilizing the AO space as a venue for collaboration with external partners.

### Example of Collaborative Activities through Open Innovation

As the AO collaborative space was launched during the COVID-19 pandemic, interaction with external visitors proved challenging in its early days. In 2022, however, AO welcomed several thousand guests, who visited in connection with more than 500 meetings—nearly three times as many meetings as in the previous year. Of these guests, half were corporate customers. However, many academics from universities and research institutes also visited. Further, the number of repeat visitors is increasing.

AO includes numerous displays and laboratories that allow visitors to experience firsthand the AGC Group’s wide range of technologies. They also have opportunities to engage in lively discussions with AGC Group engineers and test the resulting ideas on-site.

Together with more than 10 customers in mobility, electronics, and a variety of other fields, we have begun exploring solutions by using ideation, needs analysis, and seeds matching. Some of these initiatives have already begun examining collaborative themes.



Designed to resemble a park, AO Park is an open space that includes exhibitions on AGC’s history and the latest topics. Encouraging visitors to learn more about AGC will extend the range of potential collaborative initiatives.

## Three Pillars of Technology Development

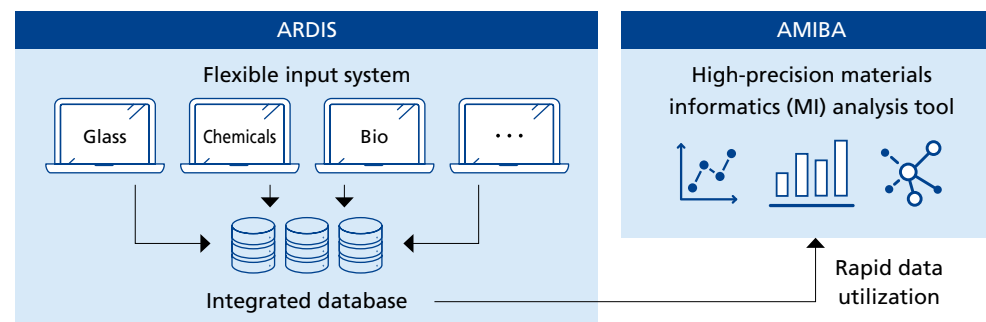
## 03. Digital Transformation (DX)

One of the key strategies of the medium-term management plan **AGC plus-2023** calls on the AGC Group to realize transformation and strengthen competitiveness through digital transformation of all business activities—from development and manufacturing through to sales. Accordingly, the Technology General Division is conducting technology development aimed at promoting digital transformation.

There is intense interest in materials informatics (MI), which can dramatically improve the efficiency of materials development through the application of computational and data science to the development of new materials and compositions. AGC was one of the first manufacturers to introduce MI, which the Company has used to develop new types of glass, the environment-friendly fluorinated solvent AMOLEA™, and various other products. However, it has previously been difficult to make extensive use of MI in wide-ranging fields because of various issues, including the lack of standardized storage formats for experimental data. AGC addressed the need for an integrated experimental data storage platform, which we saw as essential infrastructure for the use of MI, by developing MI database systems, including the AGC R&D Data Input & Storage (ARDIS) system, which incorporates an electronic laboratory notebook function for use in development activities, and the AGC Materials Informatics Basis Analysis Tool (AMIBA). This work is steadily opening the way for the development of materials by linking MI with experiments and theoretical computation through the use of software developed in-house to support computational science, including quantum calculations and molecular simulations.

AGC is creating the basis for an integrated development environment encompassing all stages from data entry to data analysis in order to support development activities in fields ranging from glass and chemicals to biotechnology. This environment is enhancing our understanding of phenomena and properties at all development stages, which promises to increase the efficiency of our R&D activities.

The AGC Group has been focusing on the development of dual-skilled personnel who combine expertise in their respective operational fields with competence in digital technologies. To achieve digital transformation-enabled value creation, the Technology General Division will collaborate closely with the Digital & Innovation Promotion Division, which was established in January 2023.



### Development of Digital Twin Technology for the Glass Melting Process

AGC has developed the CADTANK Online Computation and Optimization Assistant (COCOA) as a digital twin technology for the glass melting process. COCOA integrates an online simulator with a digital prototyping tool. Full-scale operational verification of COCOA is scheduled to begin at AGC's float furnaces in 2023.

The inside of a float furnace reaches a searing 1,600°C, which makes the analysis of internal conditions challenging. Therefore, in the 1970s AGC independently developed and began using CADTANK, a technology to simulate the glass melting process. However, the temperature inside a float furnace and the flow of molten glass change daily depending on various factors, such as the condition of the raw materials and refractory bricks.

Not only was the collection of the necessary data labor intensive, simulation specialists also needed time to conduct studies that were aimed at deriving the optimal operating conditions for stable glass quality. As a result, timely simulations were challenging.

The online simulation tool COCOA was developed to solve the aforementioned issues. COCOA uses float furnace operational data to automatically generate simulation models that enable the checking of changes in temperature distribution and flows of molten glass inside float furnaces. This allows process technicians to readily conduct on-site assessments of conditions. Going forward, AGC will build an efficient production system based on simulation forecasts.



### Three Pillars of Technology Development

## Human Resource Development and a New System for Digital Transformation

In January 2023, we established the Digital & Innovation Promotion Division as an organization responsible for planning, support, and human resource development in relation to our digital technology strategy. Assisted by the promotion efforts of this new organization, the AGC Group will leverage digital transformation to realize corporate transformation. More specifically, the Group will accelerate digital transformation in three areas: *pursuing operational excellence, strengthening competitive foundations as a materials manufacturer, and providing added value to customers.*

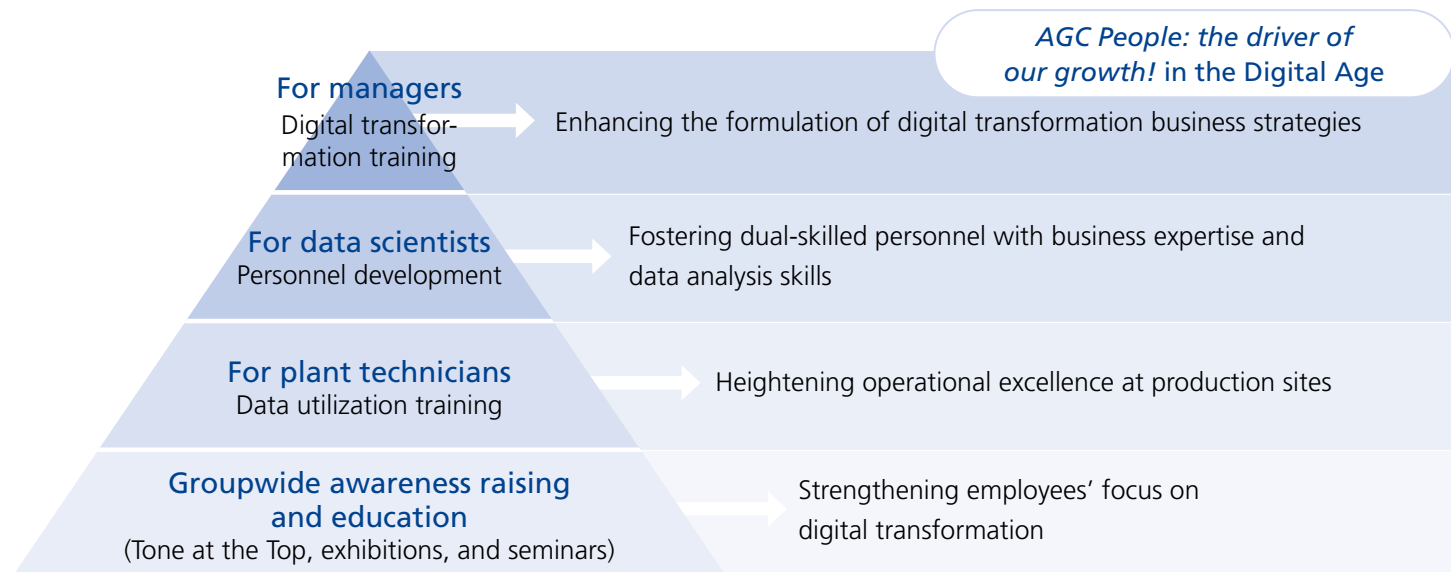
To develop the human resources essential for the acceleration of digital transformation, we are focusing on fostering dual-skilled personnel who possess expertise in their particular business fields as well as digital technology skills. To this end, we are independently evolving a multi-layered training curriculum tailored to each employee's job.

Developed during 2018 and 2019, Data Science Plus is a program designed to foster data scientists. The program has three levels: introductory, basic and applied, and advanced. By 2025, we will increase the number of advanced course graduates from the current 60 employees to

100 employees. In 2022, we also began conducting the basic and applied course in Thailand, where we have numerous production sites. Plans call for the introduction of this course to production sites in other countries.

Other digital transformation initiatives include the 2021 launch of Digital Transformation Training for Managers, which targets the senior managers of in-house companies, and Data Utilization Training for Plant Technicians. The former is a program aimed at developing leaders who can exploit digital technologies to implement corporate transformation that aligns with the strategies of in-house companies. We aim to have 100 employees complete Digital Transformation Training for Managers by 2023. At present, 87 employees have completed this program. Data Utilization Training for Plant Technicians heightens the operational excellence of our manufacturing even further through promotion of data utilization to visualize sites, thereby complementing the intuition, know-how, and experience of plant technicians.

Furthermore, to strengthen employees' focus on digital transformation, we are inviting outside experts to conduct seminars as well as holding in-house exhibitions and study sessions that allow employees to learn about digital transformation based on case studies from other in-house companies in Japan and overseas.



## DX Dialogue

An ARDIS development manager and an AMIBA development manager discuss the history of development and their thoughts on the process.

**Konishi** Murai-san, you joined the AGC Group from an IT company in 2019 and took charge of the development of the ARDIS database system. What aspects of this did you find challenging?

**Murai** AGC has a wide range of technologies, with researchers engaged in materials development, manufacturing process development, and even microbial cultivation. Moreover, individual researchers used different methods of storing experimental data, making it extremely challenging to integrate into a single database and create a centralized management system.

**Konishi** Similarly, at the initial development stage of the AMIBA analysis tool, it was practically impossible to envision how we could utilize AI in the varied fields of AGC's R&D, or even how to deploy it. We started out feeling our way, hypothesizing and verifying each point as we discussed it over and over again with other researchers. We struggled with making the system user-friendly for all the researchers, and we are still working on improving its functions. I have research experience in the organic chemistry field at the Materials Integration Laboratories in AGC. Given that you are an IT systems specialist, Murai-san, did you find it particularly challenging?

**Murai** On the contrary, it was a great help having you, Konishi-san, as my consultant due to your research experience. The more I spoke to various researchers, the more I realized the challenges involved in central database management. However, by discussing and conceptualizing the issues with you, I was able to identify commonalities among seemingly disparate experimental data. Additionally, AGC had already laid the groundwork for promoting DX. I feel we've been able to address the challenges of centralized database management with the cooperation of researchers who understood the need for better data storage.

**Konishi** While I had previously been learning about digital skills, I was greatly assisted by Murai-san's advice as an IT systems specialist on the various ways to approach systems development for AMIBA. Around the end of 2022, we merged the units that had been separately developing ARDIS and AMIBA into a single team, creating a more effective collaboration structure.


**Murai** We will continue the work on augmenting the ARDIS database and improving the usability of AMIBA, and we cannot do this without the cooperation of all the researchers. Inputting experimental data into ARDIS can feel a bit laborious, so it's crucial to clearly convey the benefits to be gained in its

use and let the researchers see these benefits in practice. We want to lower the difficulty of inputting data and make it so that a simple report can be generated without having a researcher perform data analysis themselves, bringing a tangible benefit to researchers in their day-to-day work.


**Konishi** I agree. Regarding the use of AMIBA, some researchers with little experience in the data science field might find it challenging to understand. We are advancing initiatives to provide support such as preparing video content that teaches researchers how to use AMIBA through relatable examples.

**Murai** Data science is already beginning to prove itself beneficial in many ways, such as accelerating the discovery of a glass composition that maximizes the strength of chemically strengthened glass, and speeding up the design of high-performance coating materials for automotive glass. Of course, we are pleased to hear these reports of breakthroughs but we are glad to hear researchers say "things have gotten better," even if it is only a minor daily improvement.

**Konishi** I completely agree. By building on each of these achievements as we expand the use of ARDIS and AMIBA, I think we will see even more success stories accumulate, with the systems being utilized for problem-solving in more cases. I look forward to continuing to collaborate on and improve ARDIS and AMIBA.


**Teppei Konishi**

Strategy Planning Group  
Planning Division  
Technology General Division  
Smart R&D Team Manager


**Ryota Murai**

Technology General Division,  
Planning Division,  
Strategic Planning Group  
Smart R&D Team Manager

## Intellectual Property Strategy for Achieving Our Vision

The AGC Group conducts intellectual property activities to increase its competitive advantage over competitors by obtaining rights to the results of technology development—an important resource in the advancement of the Group’s business strategies.

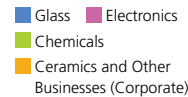
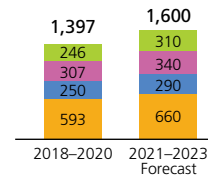
### Business Portfolio Reform and Intellectual Property Strategy

Following a strategy of *ambidextrous development*, we have been transforming our business portfolio by proceeding with development through the strategic allocation of finite development resources. Comparing the previous medium-term management plan (2018 to 2020) with the current plan (2021 to 2023), we have increased total R&D expenditures by more than 10%, increased allocation of resources to Strategic Businesses, and strengthened development aimed at the creation of Strategic Businesses. Meanwhile, our Core Businesses, which underpin our profit base, are continuing to promote sustainability management by reducing GHG emissions, recycling, and developing energy-saving technologies and products.

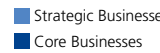
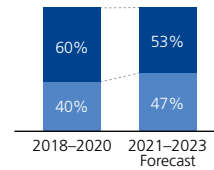
Under the supervision of the chief technology officer (CTO), the Intellectual Property Division closely coordinates with in-house technology development initiatives to build a strategic intellectual property portfolio that, from a Companywide perspective, facilitates “organizational ambidexterity.”

#### R&D Expenditures

R&D Expenditures (Billions of yen)

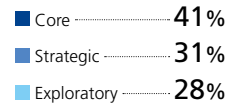
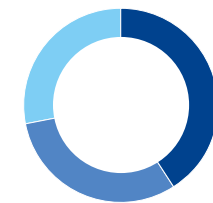


R&D Expenditures Breakdown

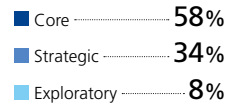
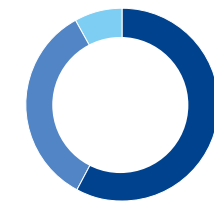


#### Inventions and Patents Held

Inventions (2022)



Patents (2022)



### Intellectual Property Activities under Sustainability Management

AGC is developing products that will help realize a low-carbon society and reduce environmental impacts.

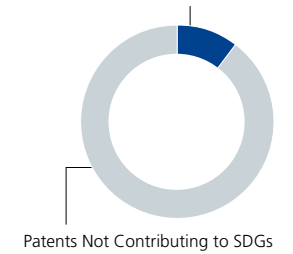
As of December 31, 2022, AGC held 572 patents\*<sup>1</sup> that are related to such products and which are classified under Sustainable Development Goals (SDGs) associated with contributions to a low-carbon society (SDGs 7, 12, and 13). These patents account for approximately 10% of all patents\*<sup>2</sup> held by AGC.

\*1 The classification of patents by SDG target was conducted using PatentSight\*, a patent analysis tool provided by LexisNexis\*.

\*2 This refers to patents (patent families) that have been registered or are in the process of being registered.

#### Percentage of Patents Contributing to SDGs

Patents Contributing to SDGs **10.5%**



#### Participation in Rule Formation

AGC actively participates in standardization and other rule-making initiatives. In-house, we engage in a range of standardization activities with the aim of creating new markets and a new society. For example, Companywide standardization strategy is overseen by the CTO, initiatives for standardization in important fields are implemented, Companywide standardization meetings are held, and human resource development focused on standardization training is conducted. In addition, we are taking measures in response to rules for a circular economy formulated by the International Organization for Standardization and rules for reduction contributions formulated by the International Electrotechnical Commission.

Methodology for Realizing ZEBs* <sup>3</sup>	Contribution to the publication of technical specifications by the International Organization for Standardization (ISO)
Standardization of the circular economy by the ISO	Development of indicators for the recyclability of products, etc., thereby contributing to the effective use of resources
Standardization by the International Electrotechnical Commission (IEC) of reduction contributions* <sup>4</sup>	Contribution to the reduction of GHG emissions throughout product lifecycles, from raw materials procurement through to disposal and recycling

\*3 Net-zero energy buildings: Buildings designed to achieve net-zero use of primary energy

\*4 The quantified GHG emissions reductions resulting from evaluated products that help reduce environmental impact throughout their entire life cycles

### Human Resource Development System

To ensure appropriate protection of its patent rights and respect for those of others, the AGC Group emphasizes employee training on patent applications, patent searches, and other aspects of intellectual property rights.

In Japan, in addition to educating employees on intellectual property from the initial stages of employment, we conduct various types of intellectual property-related employee training. We also encourage intellectual property training at in-house companies, technical divisions, and research divisions as needed. Further, at overseas Group companies, intellectual property training tailored to local conditions is provided.

### Award System for Inventors

AGC has introduced the Award System for Inventors to incentivize researchers to work on inventions that contribute significantly to advantages over competitors and result in the granting of patents. Inventors receive awards when patent applications are filed and when patents are registered. The award paid upon registration of a patent is determined by AGC using original criteria, including the novelty and originality of the invention and its impact in terms of the Company's lead over competitors.

The current system was introduced in 2018. Compared with the previous system—in which most of the awards were paid to a small minority of inventors of technologies relating to highly profitable products—the current system has significantly extended the scope of awards, increased the percentage of inventors who receive awards, and shortened lead times from creating an invention until the award is paid.

### External Awards Received

#### Inclusion in the Clarivate Top 100 Global Innovators List for 2023

AGC was selected for inclusion in the Clarivate Top 100 Global Innovators list for 2023.\*<sup>1</sup> The list is compiled by the British company Clarivate Plc, which is one of the world's leading information service providers. The company uses its patent database to identify the world's most innovative companies and research institutes. AGC has been included in the list a total of eight times, including the last six years consecutively.

\*<sup>1</sup> Clarivate uses patent data to select companies and research institutes for inclusion in its annual Top 100 Global Innovators list. The leading 100 are selected from among organizations that have filed at least 500 patent applications since 2000 and obtained at least 100 patents over the past five years. The leading 100 are identified by using a combination of indicators, including the percentage of international inventions, the level of influence, the success rate, global impact, and the breadth of fields covered.

#### Innovation Momentum 2023: The Global Top 100

AGC was selected as one of the Innovation Momentum 2023: The Global Top 100\*<sup>2</sup> innovators announced by U.S. company LexisNexis Intellectual Property Solutions, a provider of global patent search and value analysis solutions.

\*<sup>2</sup> This is an annually compiled list covering many different industries and comprising innovators that have achieved dynamic changes in technological competitiveness. Qualification for inclusion in the list is calculated by focusing on changes over the previous two years in Technology Relevance, a patent value index of LexisNexis® PatentSight®.

Top 100  
Global  
Innovator  
2023

Clarivate™



# Human Resources

Aiming to Realize Our Personnel Management Slogan,  
*AGC People: the driver of our growth!*

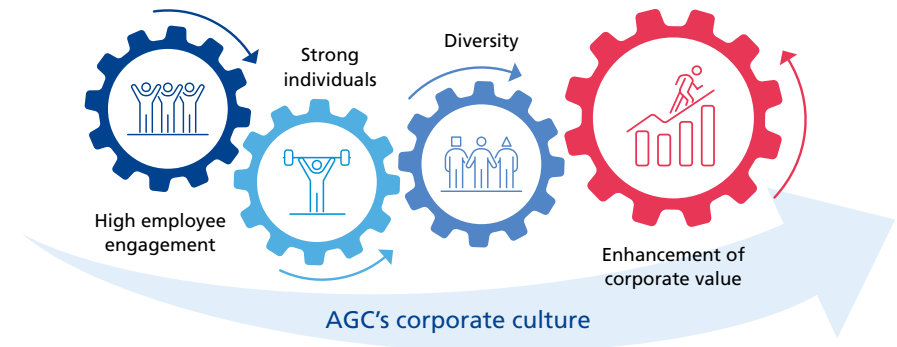


## *AGC People: the driver of our growth!*

In 1907, Toshiya Iwasaki founded the Asahi Glass Company (now AGC Inc.) and began manufacturing flat glass in the hope that his endeavor would benefit the people of Japan. 116 years later, AGC continues to pursue its mission of supporting the lives of people around the world with its unique strengths in materials and innovation. The world is incredibly diverse in terms of nationality, age, gender, cultural backgrounds, values, environments, and ways of thinking. We thus constantly consider the lives of such diverse people as we work to address social issues. Since 2016, we have been pursuing a strategy of organizational ambidexterity, based on advancing both Core Businesses and Strategic Businesses to transform our business portfolio with the aim of further contributing to society. These efforts are supported by a corporate culture that encourages ambitious initiatives: a mindset that has been passed down since the Company's founding.

The diverse human resources at AGC make its mission a reality. Employees around the world contribute to the Company's materials innovation by taking on a multitude of roles. One of our slogans is *AGC people: the driver of our growth*, which status in which each of us maximizes our abilities and works together to build a strong organization, and as a result, we will pursue and achieve business strategies and organizational goals as well as growth of the Company and the individuals within.

*AGC People: the driver of our growth!*



By keeping each one of its diverse employees around the world highly engaged and making the most of their individual abilities while coming together as one to boldly take on challenges to realize AGC's mission, the Company and its employees will grow together and continue to be an everyday essential part of our world.



## Our Founding Spirit

- Never take the easy way out, but confront difficulties.
- Trust is the best way to inspire people.
- We strive to develop technologies that will change the world.
- A sense of mission leads us to advance.

### Leadership Development Programs

We organically link Groupwide and global leadership development programs with divisional and regional programs as part of our efforts to nurture management personnel.

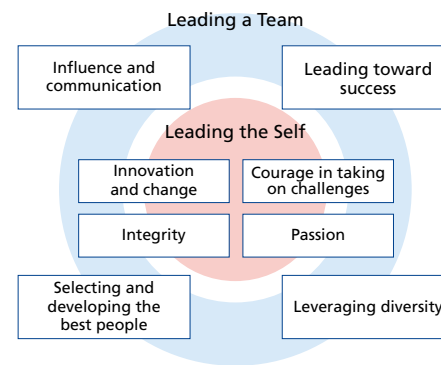
Underpinning such leadership development is the AGC Leadership Competency model, which clarifies the capabilities and qualities required of leaders in the AGC Group. In the two areas of self-development and team leadership, the model defines eight competencies and 43 concrete types of behavior.

In light of the AGC Leadership Competency model, we first select and train leader candidates at the divisional and regional levels and then develop said candidates at the AGC Group and global levels so they become the next generation of leaders. Succession plans are formulated within the Group for key positions including the president & CEO, CFO, and CTO, and future generations of leader candidates are chosen, trained, and promoted to management-level positions within the AGC Group.

Development begins after an individual development plan is formulated for each leader candidate from the three perspectives of growth through work, mentorship and coaching, and training. A key focus when it comes to growing through work is the concept of “stretch assignments,” which promote the growth of individuals by assigning them to challenging positions and tasks that call for levels of ability slightly beyond their current skill sets. Also, overall management personnel development plans are optimized through the cross-divisional assignment of the aforementioned candidates to key positions and projects throughout the Group. In addition, we conduct 360-degree appraisals to support personnel growth and carry out mentorship and coaching in line with the needs of individual personnel. Moreover, we heighten the effectiveness of management personnel development by conducting training programs at a Groupwide and global level as well as on divisional and regional bases. For example, we provide Global Leadership Sessions and the Global Leadership Journey for business managers and senior management while offering AGC University and AGC Management College courses in each region.

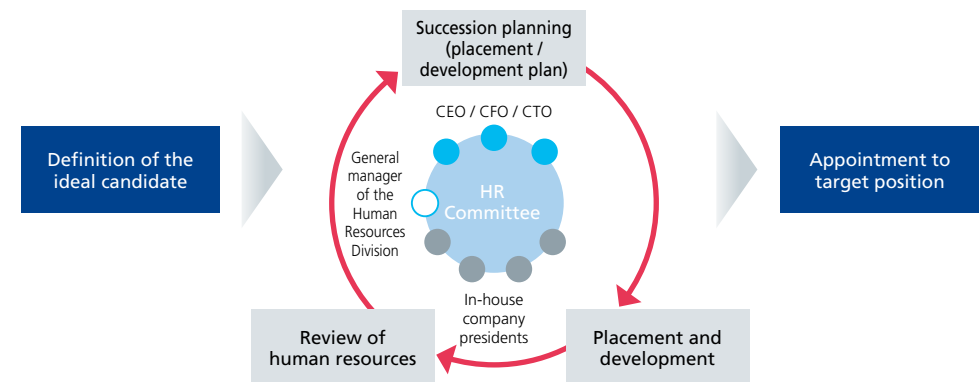
#### AGC Leadership Competencies

There are eight AGC Leadership Competencies, shown in the chart below, with 43 attached behaviors.



In these ways, the AGC Group encourages candidates to acquire the experience and knowledge necessary for management through planned assignments, coaching, training, and other developmental activities while reviewing the levels of performance and leadership qualities displayed by candidates in their current positions and tailoring placement and development plans for the following year based on candidates' progress. Furthermore, members of the management team participate directly in the discovery and development of next-generation management personnel. The HR Committee—comprising the president & CEO, CFO, and CTO, the general manager of the Human Resources Division, and the presidents of in-house companies—is involved in the personnel development cycle, and outside directors give lectures at training programs.

### Group Management Personnel Development Cycle



### Learning Opportunities That Suit Individual Needs

The AGC Group emphasizes the importance of self-motivated learning in line with each employee's individual career goals. After discussing plans for skills and career development using HDC, a human resource development communication tool for supervisors and their subordinates, employees at AGC can choose from a wide range of training options, including position-specific training, leadership training, language courses, technical training, and digital transformation training. To further expand the selection of the types of training on offer, we grant learning points\* to support self-study.

\* As part of the Company's selection-based benefits program, 1,200 points (1 point = ¥100) are granted annually to each employee to support their self-study efforts. Employees can allocate points to up half of their language and business-related self-study expenses.

In addition to our external secondary job program, we have established a new in-house program in which employees can assume a secondary position in another division within AGC. Employees can allot up to 20% of their workload to their secondary position under the program, which provides support for independent skills development, career development, and reskilling.

### Pursuing Diversity

Diversity is one of the four key values set forth in the AGC Group's Vision **"Look Beyond."** As well as being one of the foundations of the AGC Group, diversity is the source of the Group's competitive superiority. Our business management encourages innovation and value creation by providing opportunities for diverse personnel to realize their full potential. We endeavor to create systems and environments in which diverse personnel can work comfortably, and we strive to operate a fair human resource and compensation system that emphasizes ability and achievement. Through these efforts, we strive to transform diversity in all its forms into a Group strength, from gender, gender identity, age, ethnicity, nationality, the presence or absence of disabilities, sexual orientation, religion, principles, and values to careers, experience, and workstyles.

Promoting gender diversity and inclusion is a key theme for the AGC Group, for which it has set the target of having women account for 30% of its directors and Audit & Supervisory Board members, 20% of its executive officers, and 8% of its managers\* by 2030. The Group is also working to actively recruit and nurture women, and create a culture that transforms diversity into a strength. To create an environment in which diverse human resources can maximize their individual abilities, we established the Diversity Council, chaired by the president & CEO, in November 2022 and are accelerating initiatives to promote diversity.

\* AGC on a non-consolidated basis

### Diversity, Equity, and Inclusion at AGC

Diversity	Equity	Inclusion
Diversity is about empowering people by respecting, appreciating, and leveraging what makes them different in terms of age, gender, ethnicity, religion, disability, gender identity, sexual orientation, education, national origin and more.	Equity aims to give to every individual in the workplace the specific support they need to succeed and grow.	Inclusion is a call to action within the workforce that means actively involving each employee's ideas, knowledge, styles, approaches, and perspectives to maximize business success and ensure the wellbeing of each individual.

In addition, we are actively recruiting and developing human resources with extensive experience and fresh perspectives in both our Core Businesses and Strategic Businesses as we pursue our strategy of organizational ambidexterity. In a further effort to strengthen Strategic Businesses, AGC is actively incorporating into its management the knowledge of employees who belong to businesses that have newly become part of the AGC Group.

#### Success stories of diverse personnel

#### Success story 1

## Breathing New Life into AGC



### Maki Asai

Team Leader, Analytical Science Team, Innovative Technology Laboratories Common Base Technology Division

I joined AGC in 2022 and currently lead a corporate analytical science team that performs advanced analysis for development projects led by in-house laboratories and companies. In my previous position at a foreign chemical manufacturer, I experienced management as the head of both the analytical division of a

corporate research laboratory and the technology development division of a business group—much like my current position.

As soon as I joined AGC, I started implementing the necessary measures to further enhance my team's contributions, leveraging my fresh perspective as a new employee of the Company. As analysts, it is essential that we have a deep understanding of our clients' development projects and businesses to provide the required analytical information to meet the purpose. Therefore, I implemented a system in which all team members create a "one-page summary" sheet that summarizes the entire development project being analyzed. In filling out the sheet, there are many matters that need to be confirmed by the client, which encourages closer communication and thereby strengthens relationships.

## Success stories of diverse personnel

## Success story 2

Although I introduced the aforementioned system very early on in my tenure at AGC, team members began to actively utilize it after I carefully explained the purpose and expected effects of the system in line with Company policy. Now, with a greater interest in and sense of responsibility for the development projects we are asked to take on, team members are more willing to make suggestions beyond the boundaries of the organization they are asked to work for. As a result, we are welcomed and highly valued as project members. This positive change has been brought about by the team's shift in mindset.

Furthermore, other teams have also recently started utilizing "one-page summary" sheet in their work.

As a global company, AGC has a deeply rooted corporate culture that respects diversity. This is evident to me even though I am only in my second year at the Company. Everyone is warm and welcoming, and I am very grateful to be included in the company. I hope to continue to breathe new life into AGC using the perspectives I have gained through my prior experiences outside of the Company.

## Promoting Diversity as a Driver of Business Growth with "Respect" and "Hope" as Our Key Words



**Akihiro Kadokura**

CEO, AGC Pharma Chemicals Europe

After working at AGC for 14 years, I joined a U.S. healthcare company. After building my career over the twenty years that followed, fate finally brought me back to AGC, where I am currently the CEO of AGC Pharma Chemicals Europe (APCE) in Spain. I am delighted to see that AGC has succeeded in growing its businesses in the life science field, in which I was involved for many years. I am also incredibly grateful for the opportunity to utilize the knowledge I cultivated in my positions outside of at AGC.

APCE was an Active Pharmaceutical ingredients manufacturing plant of Boehringer

Ingelheim (BI) before joining the AGC Group in 2019. With its long history and strong track record, APCE currently employs many exceptionally talented personnel. Originally, we manufactured exclusively for BI, but we soon found ourselves tasked with cultivating relationships with external companies. This change called for a shift in our employees' individual mindsets, which was achieved by placing great importance on diversity. A company with an inward-looking corporate culture cannot successfully form relationships with a diverse range of customers. Accordingly, we secure personnel not only from Spain but also from surrounding countries and the United States. When people from different backgrounds come together, it is inevitable that not everyone will see eye-to-eye. However, I believe it is this clashing of opinions that can be the very trigger that helps inspire and cultivate an outward-looking corporate culture. For me, two key words are essential to remember when bringing together people from different cultures and backgrounds: "respect" and

"hope." Respect requires mutually acknowledging other people and sincerely listening to their opinions, which leads to healthy discussions. Hope entails people having a shared goal and working in unison to achieve it. My belief in the importance of these words stems from my previous experience at AGC in the United States and from my involvement in diversity initiatives at my former employer.

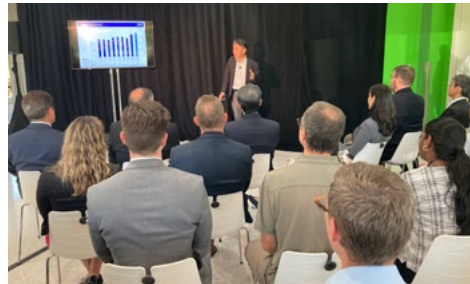
APCE's vision is to be the most trusted contract development and manufacturing organization among its customers. Four years have passed since the company became a member of the AGC Group, and the mindset of our employees is steadily changing. We will continue to promote diversity as the driving force behind our business growth with "respect" and "hope" as our key words.



## Fostering a Positive Corporate Culture

Since its founding, AGC has forged its competitive advantages based on a corporate culture that encourages ambitious initiatives. By fostering a culture of openness, we aim to spur innovation by encouraging employees with diverse ideas to share their opinions freely and openly, and to enhance each other's strengths by engaging in friendly competition.

As part of our efforts to foster this corporate culture, our management team actively engages in dialogue sessions with employees at our offices in Japan and overseas. Although the COVID-19 pandemic meant fewer face-to-face dialogues in 2020, we continued to hold them online. We resumed visits to our overseas offices in 2022, resulting in more than 100 in-person dialogues over the year.



CEO Dialogue Session

In addition, we have established the AGC Group CEO Awards as an opportunity to cross organizational boundaries to recognize and praise one another's daily efforts and achievements. Nominations are received from around the world, out of which 42 projects that embody AGC's four key values will receive the AGC Group CEO Award, and the Look Beyond Award will be presented to the most outstanding initiative among them.



Winners of the Look Beyond Award

The emphasis on employee independence is another characteristic of AGC's corporate culture. There are two communities at AGC actively helping employees learn independently, pursue their goals, and build connections. The first is the Cross-Divisional Network Activities community, which utilizes a skills map whereby AGC Group employees register their own skills from among 41 specialist skills categories (29 technical categories and 12 sales and administrative categories). Centered on skills leaders appointed for each category, the AGC Group encourages cross-divisional activities among employees possessing the same skills. These activities include the holding

of workshops, in-house seminars, and study groups in their respective communities. The second community is the Voluntary Activities community, which encourages employees to autonomously manage all aspects of the community, from the planning of activities to their execution. Employees independently generate ideas and form groups to carry out activities that help them learn from one another and create value for the Company, and like-minded employees participate in and support such activities.

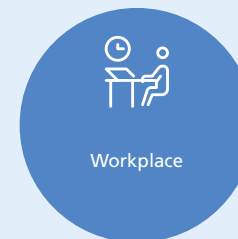


An award is presented at the AGC Group CEO Awards.



## Cross-Divisional Network Activity

What is the "Third Place" referred to in the CNA Philosophy



Workplace

2nd Place



Home

1st Place



The Great Good Place  
aexchanges can  
happen and  
take place

3rd Place

The goal of  
CNAs as a  
professional club

Special Feature

# Employee Engagement Survey 2022

Employee engagement is strengthened when highly motivated individuals and companies fostering a better corporate culture work together to mutually grow and improve. Since 2005, we have conducted employee engagement surveys to improve employee engagement by better understanding the current situation.

## 01 | Overview of the Employee Engagement Survey

Employee engagement surveys are conducted online and comprise questions related to “employee engagement” and “employee enablement.” Among the 14 survey question categories, the results of the “employee engagement” and “employee enablement” categories are considered the most important by the Company.

In 2022, we received responses from 42,656 employees, or 86% of the total workforce.

### Fourteen survey question categories

- **Employee engagement**
- Performance Management and Compensation
- Clear and Promising Direction
- Respect and Recognition
- Work Efficiency
- Leadership
- Awareness of Bad News First
- **Employee enablement**
- Development Opportunities
- Authority and Empowerment
- Resources
- Collaboration
- Quality and Customer Focus
- Other Areas (the environment, COVID-19 countermeasures, etc.)

## 02 | Results of the 2022 Employee Engagement Survey

Despite dramatic changes in the external environment, including the effects of the COVID-19 pandemic, we continued to see improvements in all categories in the 2022 employee engagement survey.

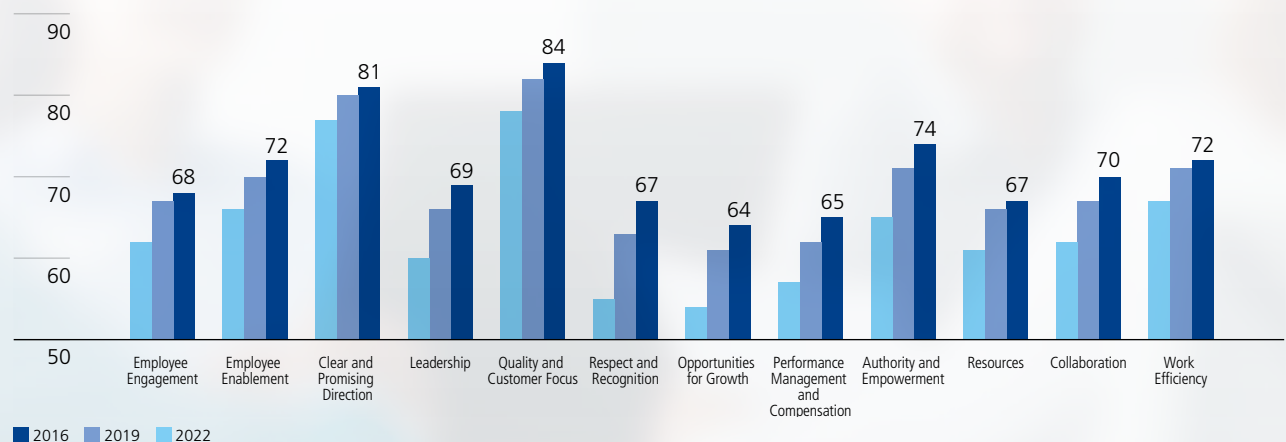
The survey also revealed key drivers that have a significant impact on the categories of “employee engagement” and “employee enablement,” both of which are of paramount importance to the AGC Group.

We separated the identified key drivers into “strengths,” “issues to focus on,” and “areas of improvement” upon comparison with global average\* and will work to implement initiatives in each category.

\* According to an external survey

### Employee Engagement Survey Results

Positive response rate (%)



## 03

## Analysis of Results

High scores in the categories of “Clear and Promising Direction” (degree of satisfaction with Company policies and goals), “Authority and Empowerment,” and “Quality and Customer Focus” suggest they are particular strengths of the AGC Group, and management will work to further build on these strengths through ongoing dialogue sessions with employees. On the other hand, there is a need to further develop the management skills of superiors and improve workstyles and work environments to address the categories in which issues were identified.





## 04

## Efforts to Improve Employee Engagement

The results of the 2022 employee engagement survey were used to prepare the Engagement Survey Report, which included an analysis of survey results and a message from the president & CEO. The report was distributed to all Group employees and is disclosed on the Group intranet. As extensive dialogues form the foundation of employee engagement improvement activities, we provide a guidance tool to assist leaders in holding small meetings within their respective teams to discuss the results in an effective manner. Such meetings are an initiative stemming from previous employee engagement survey results. We provide a guidebook to managers to facilitate dialogue and support activities to foster a better corporate culture through discussions regarding survey results.

In addition, we have identified communication and dialogue; growth opportunities; diversity and inclusion; leadership; and recognition and praise as five elements of an effective approach to employee engagement. As such, we are promoting Groupwide learning opportunities by uploading positive examples of employee engagement activities and interviews with employees on the Group’s website.

## Various Materials Related to Employee Engagement Activities (AGC Group Intranet)

Guidebook	Report material	Dialogue Progress Guide	Facilitator's Guidebook
 <p>PDF PPT Multiple languages</p> <p>Reference materials for Front-Line Managers to lead improvement activities in the workplace.</p>	 <p>Excel Multiple languages</p> <p>This is a form for filling in strengths, opportunities for improvement, and action plans in accordance with the AGC Engagement Promotion Activity Small Group Meeting Guidebook.</p>	 <p>PDF PPT</p> <p>This guide showing you the concrete way to proceed with the small meeting. (With commentary by Kota Isomura of the Digital Innovation Department AGC Inc.!)</p>	 <p>PDF PPT</p> <p>This guide showing you the role and tips of the facilitator. (With commentary by Kota Isomura of the Digital Innovation Department AGC Inc.!)</p>

CLOSE UP

04 | Efforts to Improve Employee Engagement

# Fostering a Positive Corporate Culture

Case 1

## Cultivating a Culture of Praise

### AGC Electronics America

AGC Electronics America is based in Oregon, United States. In 2020, we introduced a system to encourage recognition and praise via the online platform Recognize. A culture of praise is ingrained in the company, where colleagues express their gratitude to one another, where managers recognize the day-to-day contributions of their subordinates and commend results that exceed expectations, and where best practices are recognized by management. Employee engagement improved sharply at the time of the system's introduction, and now, two years later, the system continues to be used by a diverse range of employees.



**Darlene Gorgonia**  
AGC Electronics America  
Senior Human Resources Generalist



Case 2

## AGC-ness Award

### AGC Group CEO Awards Secretariat

We established the AGC Group CEO Awards with the goal of fostering a positive corporate culture of recognition and praise while providing a platform to share best practices.

Of the 42 awards selected from the previous year's activities, a total of eight projects were nominated as candidates for the Look Beyond Award. The candidates represented the following entities: Architectural Glass Asia Pacific, Architectural Glass Europe & Americas, Automotive, Electronics, Chemicals, Ceramics, and corporate divisions reporting to the CFO and those reporting to the CTO.

In 2022, the AGC-ness Award was established to enhance the Group's corporate culture of recognition and praise by considering how the concept of AGC-ness is reflected in eight of the Company's best practices. In this award, participants are required to vote for the project in which AGC-ness is best reflected among the nominees for the Look Beyond Award, while simultaneously casting their votes for the key words that embody AGC-ness. The call for AGC Group members to participate and cast their votes was made personally by President & CEO Yoshinari Hirai.

In the first year of the AGC-ness Award, "AGC Way Journey, from Young to Mature Culture in Brazil," an initiative of AGC's Guaratinguetá Plant in Brazil, received the most votes.

Over the past two years, employees at the Guaratinguetá Plant responded to the key task of structural reform by boldly strengthening facets of best thinking and best practices such as

teamwork, mutual respect, improvement activities, and challenging the status quo guided by the AGC Way. Such an approach has also led to record results in the areas of safety, the environment, quality, cost, and productivity. The above efforts have been met with a great deal of praise from Group members.

#### "AGC-ness" Key Words Chosen by Voters

- 1st Place: Taking On Challenges
- 2nd Place: One Team
- 3rd Place: Innovation
- 4th Place: Diversity
- 5th Place: Creativity

What voters felt "AGC-ness" was

- The determination to not give up and continue to look for new opportunities to be the best in the region
- The ability to drive a company forward and maintain stability



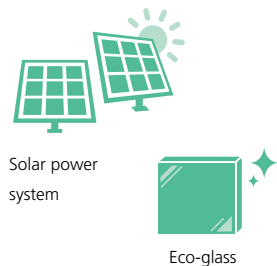
# The Environment

Contributing to the Creation of a Sustainable Society in  
Harmony with Nature

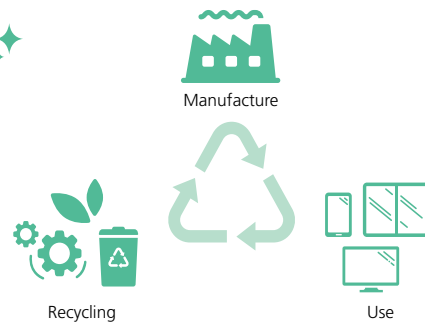
## AGC and Environmental Issues

In advancing sustainability management, AGC views the environment as one of its foremost management priorities. Starting with adherence to laws and regulations at its bases around the world, AGC engages in environmental management activities that strive to minimize the environmental burden of its business activities while inhibiting the environmental impact of its products. Among the material issues that AGC identified in 2019, the Company has defined three priority areas related to the environment: addressing climate change, using resources effectively, and considering relationships with local communities and the environment (conserving natural capital). As a company involved in the manufacture of glass and chemicals, businesses that consume large amounts of energy, AGC has integrated its business strategies to deal with climate change. Regarding the priority areas of using resources effectively and considering relationships with local communities and the environment (conserving natural capital), AGC is ready to advance activities for setting medium- and long-term targets while aiming to attain short-term KPIs with the objective of creating social value.

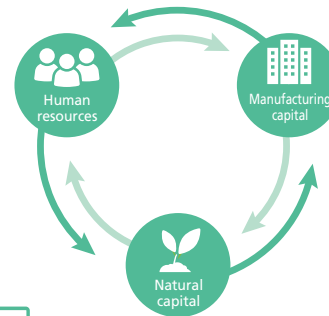
### Addressing Climate Change



### Using Resources Effectively



### Conserving Natural Capital



### Using Resources Effectively

The AGC Group's products are made with natural resources such as silica sand and fluorite. While effectively using the earth's limited resources, AGC is strengthening new initiatives to limit resource procurement in line with its aim of creating a circular economy for resources in all phases of operations, by further utilizing the 3Rs (reduce, reuse, and recycle), reusing resources, expanding the use of recycled resources, and improving resource productivity,\* including packaging. The Company aims to realize a circular economy by balancing economic growth with the sustainable growth of society through the greater supply of longer-lasting products and products designed to reduce, reuse, and recycle materials.

\* Resource productivity is a comprehensive indicator of how effectively resources are being used. It compares the volume of natural resources and energy used with the amount of products manufactured and their economic value.

### Considering Relationships with Local Communities and the Environment (Conserving Natural Capital)

Our lifestyles and businesses depend heavily on biodiversity and other forms of natural capital. Preserving the health of this natural capital is essential to the ongoing business activities of AGC. Since AGC's business activities have an impact on natural capital, the Company manages all aspects of said impact in all phases of its value chain to minimize its environmental impact. In addition to minimizing any negative impacts, the Company aims to help preserve natural capital by creating positive impacts as well.



Please refer to the Sustainability Data Book for information about our initiatives regarding the effective use of natural resources and our initiatives in terms of considering relationships with local communities and the environment (conserving natural capital), including the management of pollutants.

<https://www.agc.com/en/sustainability/book/index.html>

### Management Structure

Progress on environmental activities is promptly reported to the Board of Directors. Based on proposals submitted to the Board of Directors, policies on various topics, plans, and progress are scrutinized, approved, and supervised.

Chaired by the CEO and with members including the CTO, CFO, in-house company presidents, heads of independent strategic business units (SBUs) and heads of all corporate divisions, the Sustainability Committee was established as a decision-making body for initiatives related to sustainability, meeting four times a year. The Sustainability Committee is positioned on the same footing as the Management Committee. Further, under the supervision of the Board of Directors, the Sustainability Committee is responsible for deciding and monitoring the execution of initiatives related to sustainability, including environmental activities. The committee debates policies based on opportunities and risks pertaining to the AGC Group’s environmental activities, the outcome of environmental monitoring, and any identified issues.

Led by the executive officer in charge of environment-related matters, the AGC Group EHS Committee meets four times a year. At meetings of the committee, general managers in charge of environmental activities at in-house companies and SBUs, as well as employees in charge of environmental activities at corporate divisions, discuss and deliberate methods for implementing management decision-making, particularly pertaining to environment-related risks; the appropriateness of plan–do–check–act (PDCA) cycles and corrective actions aimed at realizing continuous improvements based on monitoring; and the level of compliance with environmental laws and regulations. Responsible organizations implement appropriate activities based on the resolutions of the AGC Group EHS Committee in accordance with their respective roles.

### Addressing Climate Change

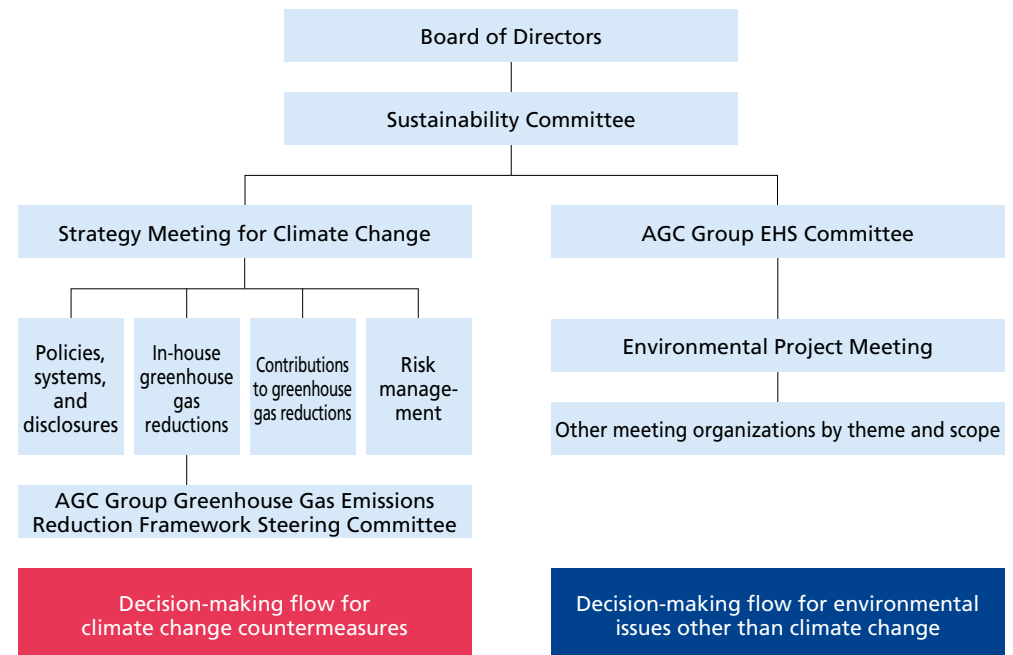
Climate change has a major impact on our efforts to improve corporate value and make decisions on business strategy. AGC endorses the principles of the Task Force on Climate-related Financial Disclosures (TCFD), which was established by the Financial Stability Board, and properly discloses information about opportunities, risks, and analyses of climate change.

## Governance

### Management Structure to address Climate Change

The Strategy Meeting for Climate Change, which is led by the general manager of the Sustainability Division in the Corporate Planning General Division, deliberates in a timely fashion that AGC responds to risks and evaluates strategies based on resolutions of the Sustainability Committee, while reflecting upon the changes inside and outside the Company that result from climate change. The AGC Group Greenhouse Gas Emissions Reduction Framework Steering Committee, which is led by the general manager of the EHSQ General Division, works closely with specialist entities in the organization on data management, technological innovation, energy management, and supply chain management with the aim of reducing GHG emissions around the world and across the entire business.

### Management Structure



## Strategy

### Identification of Climate Change-Related Opportunities and Risks

The AGC Group defines the short term as until next year, the medium term as three years from now, and the long term as 2030 onward. Based on the below 2°C and the 4°C climate change scenarios, we identify and assess climate change-related opportunities and risks that may have an impact on our operations, taking into consideration the perspectives of both the mitigation of and adaptation to climate change, while evaluating the possibility of underlying changes in operations, earnings, and expenses. In 2019, AGC identified opportunities and risks based on the TCFD framework, using its Automotive Business as a representative case, and analyzed scenarios. Since then, we have expanded the scope to encompass the entire AGC Group and once again identified climate change opportunities and risks. In 2022, we narrowed down the opportunities and risks identified for each business and comprehensively updated the determining factors used in each climate change scenario to evaluate the impact on a business segment basis.

### Evaluation of Climate Change-Related Impact on Each Business Segment

The types of opportunities and risks related to climate change vary by business segment. In order to accurately understand and address these opportunities and risks, it is necessary to grasp conditions at the business segment level. In 2022, we assessed these opportunities and risks through extensive discussions among managers and employees in corporate divisions and each business division that shed light on the unique nature of and conditions in each business.

Through assessments, rising carbon prices and all physical risks were deemed as risks that could have a Companywide impact. Moreover, we discovered that customer requests to reduce GHG emissions have occurred to varying degrees in each business.

Regarding opportunities, we understand that each business domain has the potential to expand various kinds of opportunities in markets that are evolving due to climate change. In the building and industrial glass field, for example, we see long-term expansion in the building construction and renovation market in developed countries. We also anticipate faster growth in markets for parts and materials used in zero-emission vehicles, electric vehicles, and fuel-cell vehicles in the areas of automotive glass, electronic materials, and chemicals. In the chemicals field, meanwhile, AGC has many products likely to see business expansion in markets for next-generation energy, coolants, and solvents.

### Results of Climate-Related Opportunity and Risk Assessments by Business Segment

Climate change scenarios	Identified opportunities and risks				Related business segment				
	Main categories	Subcategories	Opportunities and risks	Occurrence time frames	Architectural glass	Automotive glass	Electronics	Chemicals	Ceramics
Below 2°C	Transition risks	Government policies, laws, and regulations	Increase in carbon prices	Short to medium term					
		Reputation	Customer requests to reduce GHG emissions	Medium term					
		Technologies	GHG emissions reductions at in-house power generation facilities	Medium term					
	Opportunities	Products and services	Building construction and renovation market	Short to medium term					
			Solar power generation market	Short to medium term					
			Hydrogen-related market	Medium to long term					
Electric vehicle / fuel-cell vehicle market			Medium to long term						
		Next-generation coolants and solvents market	Medium to long term						
4°C	Physical risks	Acute	Sudden disasters	Long term					
		Chronic	Water stress	Long term					
			Rising temperatures	Long term					

Note: For this analysis, the Chemicals Business includes the Life Science business.

### Analysis of Climate Change Scenarios

We conducted scenario analyses using the TCFD framework to assess key opportunities and risks shared by multiple businesses or across the entire Group from among the opportunities and risks identified in our assessment. Based on these scenario analyses, the AGC Group has formulated management strategies and business plans with the aim of mitigating risks and taking advantage of opportunities in order to remain resilient to the impacts associated with climate change.

In the below 2°C scenario, we assessed to what degree costs will potentially rise stemming from government policies to transition to carbon pricing. Assuming the rise in global temperatures is kept below 2°C, based on the Announced Pledges Scenario disclosed by the International Energy Agency, it is forecast that carbon prices might be set at US\$135/t-CO<sub>2</sub> in developed countries and US\$40/t-CO<sub>2</sub> in emerging countries that have declared carbon neutrality. Reconciling these figures with the recent CO<sub>2</sub> emissions of the AGC Group by business and country, we can estimate the overall financial impact on the Group. In order to mitigate the impact of this transition, the AGC Group is transforming its entire business portfolio, taking steps to reduce GHG emissions (P.88), as described below, and operating an internal carbon pricing system to encourage investments in energy conservation.

In the below 2°C scenario, we have identified numerous major opportunities. To address changes in its product markets, the AGC Group creates business plans based on the market projections of trustworthy third-party organizations. Our products that meet new market needs include heat-insulating window glass for buildings, which excels in durability and recyclability with consideration given to resource recycling, and green coolants and solvents with very low global warming potential (GWP) coefficients.

In the 4°C scenario, AGC did an initial evaluation of the impact on individual operations of seven major manufacturing plants from increasingly severe, sudden disasters—such as flooding and storm surges—caused by climate change. We calculated the average annual impact, taking into consideration the frequency of disasters and the total amount of impact from a single disaster. In this way, we identify plants with significant risks and measured the potential scale of impacts from sudden disasters and reflect these findings in measures to prevent flooding at individual plants. At the AGC Yokohama Technical Center, for example, we have been constructing storm surge countermeasures for each facility since 2022. We plan to expand these countermeasures to other bases in Japan and around the world.

### Business impact analysis and response based on climate change scenarios

Major Classifications	Opportunities / Risks	Scenarios	Financial Impact	Response
Transition risks	Increase in carbon prices	Developed countries: US\$135/t-CO <sub>2</sub> Emerging countries: US\$40/t-CO <sub>2</sub> (2030 / below 2°C scenario)	Up to US\$770 million <ul style="list-style-type: none"> <li>Assumes no change from 2021 emissions level (Scope 1 + Scope 2)</li> <li>Considers possible introduction of carbon pricing in each country and region by 2030 (consolidated basis / below 2°C)</li> </ul>	<ul style="list-style-type: none"> <li>Fuel conversion, oxygen combustion, electrification of float glass melting furnaces</li> <li>Reduce electricity consumption intensity and introduce renewable energy in chlor-alkali electrolysis facilities</li> <li>Reflect internal carbon pricing in investment decisions</li> <li>Evaluate business portfolio based on scenario analyses and carbon efficiency</li> </ul>
		Note: Disaster frequency is defined on an individual manufacturing plant basis using models of private-sector weather companies.	Up to ¥19 million / year (non-consolidated basis / 2030 / below 2°C and 4°C scenarios)	
Opportunities	Building renovation market	Renovation rates in Europe to double by 2030 (2°C and 4°C scenarios)	Calculation	<ul style="list-style-type: none"> <li>Sales of window glass that excels in heat insulation and recyclability</li> <li>Sales of solar cells integrated into building materials</li> <li>Sales of next-generation, environment-friendly coolants and solvents</li> </ul>
	Next-generation coolants and solvents market	Low-GWP coolant market expected to triple in size by around 2030	Calculation	

\* We plan to disclose more details of our scenario analyses in the Sustainability Data Book 2023 to be released in August 2023.



## Risk Management

### Process for Identifying and Assessing Climate-Related Risks

For short-term and medium-term climate-related risks, we identify and assess major risks that require a response as part of risk analyses under enterprise risk management conducted every three years. We address identified risks in accordance with the AGC Group Enterprise Risk Management Basic Policies, basic policies aimed at reinforcing the risk management structure of the AGC Group.

For long-term risks, we strive to understand various opportunities and risks that could arise from climate change. Moreover, we aim to minimize risks and reinforce our competitiveness by continuing to evaluate the appropriateness of our strategies based on scenario analyses and the deliberations of the Sustainability Committee.

### Process for Management of Climate-Related Risks

The Board of Directors and the Management Committee regularly monitor identified climate-related risks and perform the management thereof. Corporate divisions, in-house companies, and SBUs analyze risks and examine countermeasures for each business and project. If necessary, such risks are deliberated on by the Board of Directors and the Management Committee.

### Integration of Risk Management Processes with Climate-Related Risk Identification, Assessment, and Management Processes

Factors that cause risks likely to have a major impact on the operations of the AGC Group if they were to materialize are classified as “major risk factors,” and the management team maintains and operates a framework for monitoring the Groupwide management of these risks. For climate change risks deemed as major risk factors, AGC has created the AGC Group Risk Management Implementation Rules to guide management on how to regularly self-inspect the level of risk management in their organizations and monitor the results.



Please refer to the link below for more information about AGC's business risks and other risks.  
<https://www.agc.com/en/ir/policy/risk/index.html>

## Metrics and Targets

Regarding climate change-related targets, AGC manages GHG emissions as a key performance indicator, which it uses to assess risks and opportunities arising from climate change. With the aim of achieving net-zero carbon emissions by 2050, AGC has set a milestone target of reducing GHG emissions by 30% by 2030, compared with 2019 levels (Scope 1 and Scope 2). For Scope 3, in 2022 we began targeting a reduction in GHG emissions of 30% by 2030 versus the 2019 level for categories 1, 10, 11, and 12. Furthermore, in 2022 the Company established

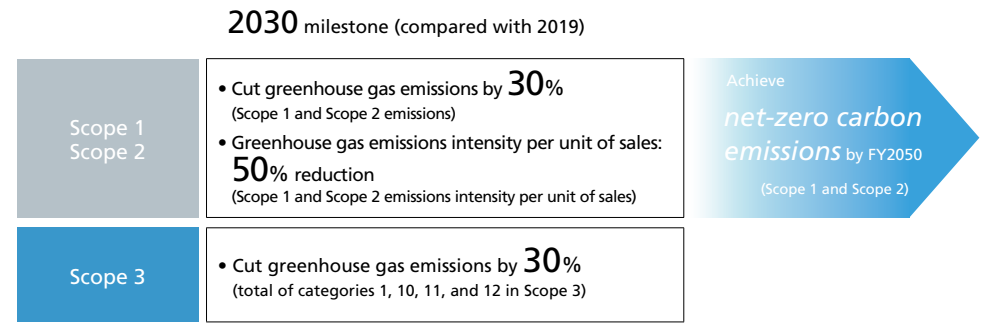
an engagement target to encourage suppliers—who account for 30% of category 1 and category 3 GHG emissions—to acquire Science Based Targets certification for GHG emissions reduction targets by 2027.

AGC intends to create and achieve measures to reduce GHG emissions in each Scope with the objective of achieving *net-zero carbon emissions* by fiscal 2050. In Scope 1, since float glass-melting furnaces in the glass manufacturing process account for half of all GHG emissions, AGC is responding by adopting leading-edge production technologies, such as ammonia combustion, and incorporating energy conservation technologies, including total oxygen combustion, and recycling technologies for cullet. In Scope 2, GHG emissions from chlor-alkali electrolysis facilities make up half of all emissions. AGC is responding by using more renewable energy and the IM method, an ion exchange method with low environmental impact that the Company developed proprietarily. In Scope 3, roughly 60% of GHG emissions are traced to purchased products and services (category 1) and the processing of sold products (categories 10 through 12). Because AGC cannot take on all of these challenges by itself, the Company aims to enlist the support of its suppliers and cut emissions throughout the entire value chain.

In addition to this, AGC is focusing on improving the level of its data accuracy and analysis. In 2022, the Company began to digitalize the management of environmental performance data (manage an online platform in earnest), including data on GHG emissions. Doing so has helped us visualize emissions at each base and identify bottlenecks. From 2023 onward, we will set targets each year for GHG emissions by business activity, and create a structure for advancing a PDCA cycle while keeping track of actual GHG emissions.

AGC is also monitoring trends by gathering data on water and cullet use, as well as on other environmental indicators.

Our GHG emissions (Scope 1, Scope 2, and Scope 3) from 2019 to 2022 are presented on the following page.



GHG Emissions (Scope 1, Scope 2, and Scope 3) (2022)

GHG Emissions: Scope 1, Scope 2, and Scope 3

(Thousands of t-CO<sub>2</sub>-e)

	2019	2020	2021	2022
Scope 1 (direct emissions)	6,081	6,595	6,986	6,311
Scope 2 (indirect emissions from purchased energy)	5,288	4,634	4,621	4,714
Scope 3 (other indirect emissions)	13,175	11,600	11,527	10,906
Total	24,544	22,829	23,134	21,931

Coverage of Scope 1 and Scope 2 emissions AGC Inc. and its consolidated subsidiaries (a total of 128 manufacturing and non-manufacturing sites as defined by the Company's standards)

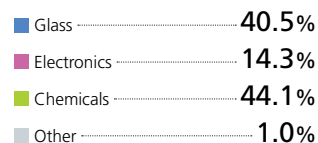
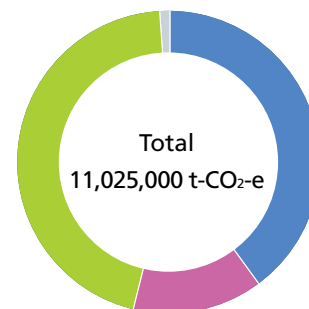
Coverage of Scope 3 emissions AGC Inc. and its consolidated subsidiaries (a total of 230 manufacturing and non-manufacturing sites as defined by the Company's standards)

GHG Emissions: Scope 3

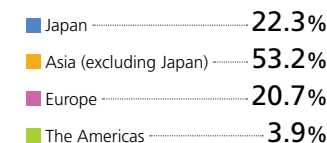
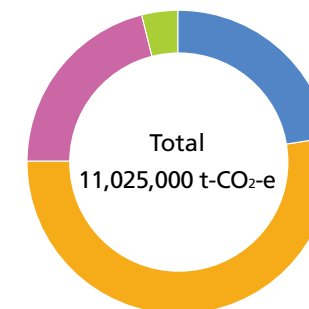
(Thousands of t-CO<sub>2</sub>-e)

Category	2019	2020	2021	2022
Category 1 Purchased goods and services	2,942	3,716	3,406	4,117
Category 2 Capital goods	389	684	685	778
Category 3 Fuel- and energy-related activities (not included in Scope 1 or Scope 2)	1,776	1,102	2,266	1,586
Category 4 Upstream transportation and distribution	1,197	1,007	1,293	954
Category 5 Waste generated in operations	12	35	14	82
Category 6 Business travel	19	43	18	53
Category 7 Employee commuting	21	51	20	31
Category 8 Lease assets (upstream)	-	-	-	-
Category 9 Transportation and distribution (downstream)	-	-	-	-
Category 10 Processing of sold products	282	269	261	344
Category 11 Use of sold products	2,398	1,945	1,681	1,483
Category 12 End-of-life treatment of sold products	3,971	2,581	1,716	1,259
Category 13 Lease assets (downstream)	167	167	167	162
Category 14 Franchise	-	-	-	-
Category 15 Investments	-	0	-	58
Total	13,175	11,600	11,527	10,906

By Business Segment  
GHG Emissions  
(Scope 1 and Scope 2) (2022)



By Region  
GHG Emissions  
(Scope 1 and Scope 2) (2022)



By Business Segment Actual GHG Emissions (Scope 1 and Scope 2) Intensity per Unit of Sales (2022)

Business Segment	1,000 t-CO <sub>2</sub> -e / ¥100 million
Glass	0.49
Electronics	0.51
Chemicals	0.61
Other	0.13

Notes: 1. Shown in 2022 segments  
2. The noted GHG emissions might change in the future because they are based on data prior to acquisition of third-party certification.  
3. Figures for each year might be different from previously disclosed information due to revisions made for the purpose of refining the data



For more information on our climate actions, please refer to the AGC Sustainability Data Book.

<https://www.agc.com/en/sustainability/book/index.html>

## Promotion of Environmental Activities in Entire Supply Chain

Based on the **AGC plus-2023** medium-term management plan that commenced in 2021, the AGC Group has proactively engaged in environmental activities. In continuation from the AGC Integrated Report 2022, Mr. Shigekuni Inoue, General manager of the EHSQ General Division, and Mr. Seigo Iwakura, General Manager of the Procurement & Logistics Division, shared their thoughts below.

### Message from the General Manager of the EHSQ General Division



#### Shigekuni Inoue

General Manager of the EHSQ General Division,  
General Manager of the AGC Yokohama Technical Center

The AGC Group has declared three priority areas to address through its environmental activities. Namely, addressing climate change, using resources effectively, and considering relationships with local communities and the environment (conserving natural capital). The Group has focused on visualizing its targets and initiatives in order to advance as one team on these fronts. At the same time, as the materials industry, to which the AGC Group belongs, is energy-intensive, we are prioritizing efforts to address climate change.

In order to better visualize our targets, in 2022 we decided our new objectives for cutting Scope 3 GHG emissions, demonstrating our commitment to reducing such emissions throughout the entire supply chain. We also filled out the framework for visualization by creating an internal committee system and building a data management structure. Moreover, we have enhanced the

level of our information disclosure as another facet of visualizing our environmental initiatives and targets. As a result, AGC was selected for inclusion in the Climate Change A List by the CDP, in addition to receiving other well-regarded external evaluations.

Looking ahead, we must further improve the visualization of the framework while utilizing a PDCA cycle and taking concrete steps to achieve our interim 2030 GHG emissions reduction milestone targets and our 2050 target to achieve net-zero carbon emissions, as part of the AGC Group's efforts to address climate change. In terms of our two other priority areas, we are ready to move forward in unison to visualize the framework and achieve our targets.

The environment is just as important as safety and quality in our business activities. AGC has made steady progress regarding its data management systems for safety and quality, identified and remedied pitfalls in its rules as a result of conducting individual safety awareness surveys and analyzing its safety culture, and has begun to take steps to make improvements. I believe it is important for each and every employee of the AGC Group to become more aware of the environment and reevaluate their stance thereon while we update our rules and frameworks. At the EHSQ General Division, we will continue to visualize our environmental initiatives and targets and utilize a PDCA cycle to enable ongoing improvements.

### Message from the General Manager of the Procurement & Logistics Division\*



#### Seigo Iwakura

General Manager of the Procurement & Logistics Division

In 2022, the AGC Group set targets for reducing GHG emissions across its entire supply chain as a demonstration of its commitment to dealing with climate change. Looking ahead, it will be important to advance specific initiatives and refine the data that supports these initiatives.

One initiative being undertaken by the Procurement & Logistics Division is the introduction of renewable energy. At the division, we support the introduction of renewable energy at bases in Japan and around the world. Moreover, we work closely with our essential suppliers to reduce Scope 3 GHG emissions. In 2022, AGC attained CDP Supply Chain membership status to strengthen supplier engagement, and during the year the Company selected 26 suppliers in Japan and other parts of Asia—mainly those handling raw materials that emit large amounts of CO<sub>2</sub> emissions—and asked them to answer a

questionnaire provided by the CDP. Using the insight and feedback we gained in 2022, we will reach out to 60 suppliers from around the world in 2023. CDP Supply Chain membership also serves as an opportunity to engage in dialogues with suppliers, whereby we aim to encourage them to refine their data and further strengthen their environmental initiatives.

Moreover, AGC is promoting sustainable procurement. In 2022, we formulated the AGC Group Code of Conduct for Purchasing Transactions as an internal guideline for all employees of the AGC Group, thereby codifying rules that employees should follow for practicing sustainable procurement. This addresses not only the environment, but also human rights issues that might arise in the supply chain, and we are working to thoroughly implement these guidelines. Alongside the initiatives mentioned above, we are collaborating with each business division on initiatives to recycle resources, and we have begun to see concrete results.

As the Procurement & Logistics Division works closely with external partners, business divisions, and the EHSQ General Division, it will continue to strengthen collaboration and help the AGC Group as a whole advance its environmental activities.

\* Job title changed as of April 1, 2023, previously General Manager of the Purchase & Logistics Division

# Corporate Governance

The AGC Group has established the AGC Group Corporate Governance Basic Policy and strives to continuously strengthen and improve its corporate governance while operating in a manner that transcends the boundaries of the parent and its subsidiaries, in order to achieve sustainable growth and improve corporate value for the Group over the medium to long term.

## Interview with the Chairperson of the Board of Directors

Hiroyuki Yanagi, who became chairperson of the Board of Directors in March 2022, was asked to respond to the five questions below.

### QUESTIONS

1. Have changes been made to the administration of the Board of Directors over the past year?
2. Which topics did the Board spend time discussing?
3. In relation to strengthening governance, what were the benefits of measures taken in 2022, and which issues need to be addressed?
4. What is your assessment of the results of the medium-term management plan?
5. What should be done to enhance corporate value?



### Hiroyuki Yanagi

Outside Director, Chairperson of the Board of Directors,  
Member of Nominating Committee and Compensation Committee

Hiroyuki Yanagi has served as the president, CEO and representative director as well as the chairperson and director of Yamaha Motor Co., Ltd. Based on his abundant experience in the corporate management of this company, which is proactively advancing global expansion in the mobility market, he provides recommendations on the overall business management of AGC, including the strengthening of the development of the Company's global businesses.

Years of service as a director: Four (as of March 30, 2023)

## 1.

## Have changes been made to the administration of the Board of Directors over the past year?

In 2022, not only directors but also everyone involved in the administration of the Board of Directors—including Audit & Supervisory Board members, executive officers, and the secretariat personnel—became more conscious of the need for improvement and worked together to heighten the quality of discussions.

First, the secretariat organized the introduction of videos to prior briefings on the agenda items of Board meetings. This innovation is very helpful as it allows directors to efficiently familiarize themselves with the agenda items in preparation for discussions. Second, documents prepared by executive officers reporting to Board meetings, which were on occasion several dozen pages in length, are now limited to approximately 10 pages. The big picture, rather than overly detailed documents, is needed for Board discussions. Since Board meetings are a forum for discussion, rather than an occasion for reporting, we have requested the preparation of concise documents.

Thanks in part to the efforts of the secretariat and executive officers, directors and Audit & Supervisory Board members have become more likely to make comments. In particular, the increase in comments from Audit & Supervisory Board members has been particularly noteworthy and has broadened the scope of the discussions. Discussions need diversity. Audit & Supervisory Board members have different backgrounds and personalities from those of directors and offer opinions based on different perspectives. I also feel that discussions have become more meaningful as there are more opportunities for Yoshinori Hirai, the president & CEO, to speak clearly about the direction of the business management.

## 2.

## Which topics did the Board spend time discussing?

If we think of a corporate organization's business divisions as a vertical axis and the back-office divisions as a horizontal axis, I believe that improving, strengthening, and broadening both axes in a well-balanced manner is important. In AGC's case, the vertical axis comprises in-house companies, while the horizontal axis consists of corporate divisions. At Board meetings, we have become increasingly adept at structuring agenda items so that they are well balanced between the two. Consequently, we are now able to hold discussions that reflect the interrelatedness of the axes.

With respect to the vertical axis, we discussed three major topics. The first was the profit measures to be implemented in unfavorable business conditions. Given that the business environment in 2022 was tough not only for AGC but also for many other Japanese companies, we asked in-house companies to discuss and implement measures for securing profits in such an environment.

Our second topic was investment for growth. We decided to continue investing in Strategic Businesses without pause. As for Core Businesses, the Board decided to implement major investments aimed at increasing production capacity for chlor-alkali and fluoropolymer products. The implementation of these strategic investments represents a great opportunity for the Group. In discussions on such investments, I always inquire whether they include ambitious technological initiatives that will lead to future growth or include initiatives that AGC is uniquely qualified to realize. In particular, the investment to increase production capacity for chlor-alkali products in Thailand totals more than ¥100.0 billion and is the largest investment of its kind ever planned by the Group. I commend the fact that the detailed plan submitted to

the Board by executive officers includes ambitious new technological initiatives rather than simply replicating past practices.

The third topic was business restructuring, with the Automotive Glass Business, the Display Business, and Russia-related businesses being discussed. In relation to these businesses, we are taking decisive steps to implement drastic restructuring and recognize impairment losses.

As for the horizontal axis, we discussed a wide range of topics, including the environment, safety, quality, R&D, internal audits, human resources, sustainability, and digital technologies. Moreover, I feel that the content of the reports we receive on each topic is improving with each passing year. In the area of human resources, discussions on women employees progressed, but our discussions on non-Japanese employees were insufficient. Meanwhile, the holding of further discussions on sustainability and digital technologies remains a task going forward, including discussions aimed at clarifying and classifying how these issues should be viewed by the Board as well as which aspects it should concentrate on.

## 3.

## In relation to strengthening governance, what were the benefits of measures taken in 2022, and which issues need to be addressed?

The foundations of governance have already been laid. However, as society changes, stakeholders' expectations will also change. Therefore, we need to fill in the missing pieces accordingly.

As part of such efforts, we have introduced a new system to determine the reappointment of the president & CEO. Under this system, every year the Nominating Committee evaluates whether

the president & CEO is fulfilling their role and whether or not they are helping enhance corporate value, decides whether or not the president & CEO should be reappointed, and then submits a recommendation to the Board for its approval. This ensures that not only the president & CEO but also those deciding on reappointment remain focused on their tasks. The system also provides a good opportunity to communicate what is expected from the president & CEO.

In the future, we should consider introducing similar systems for the evaluation of outside directors and chairpersons as well. Board meetings are serious affairs, and I believe that incorporating such systems will allow for discussions that are more effective.

Also, I believe that increasing the Board's diversity is an issue that should be considered. For example, appointing non-Japanese directors is one way of increasing diversity. Recently, many different companies that are engaged in global business management have been finding the experience of their non-Japanese directors useful in such areas as human rights issues, public relations, and global human resources. Directors with sensibilities and values that differ from those of their Japanese colleagues help in making appropriate management decisions. I myself have experienced such situations. We will optimize the AGC Board's composition by discussing the significance of diversity to the Board and the mix of experience and values it requires.

## 4.

### What is your assessment of the results of the medium-term management plan?

In 2021, operating profit surpassed ¥200.0 billion. It was slightly below ¥200.0 billion in 2022's results and is expected to remain at this level in 2023. Nonetheless, maintaining operating profit in the vicinity of ¥200.0 billion is probably the most significant

achievement. The Group's business results clearly reflect the benefits of *business portfolio transformation*, which has involved both Strategic and Core Businesses.

On the other hand, the AGC Group needs to be more specific about the social value it wants to create. Currently, Group has identified five areas in which it will create social value: *the realization of a sustainable global environment, the realization of a safe and comfortable urban infrastructure, the realization of safe and healthy lifestyles, the maintenance of a healthy and secure society, and the creation of fair and safe workplaces*. The Group should explain more clearly to stakeholders the contributions to these areas that specific technologies and businesses will make. In each of these areas, the Group must develop sustainability management processes that set out stories extending from the present into the future and that manage them through the establishment of key performance indicators (KPIs) and the utilization of plan-do-check-act (PDCA) cycles.

I envision the creation of concrete social value in the identified areas directly benefiting AGC's brand value.

## 5.

### What should be done to enhance corporate value?

While continuing to maintain high, stable levels of economic and social value, the Group must raise AGC's brand value. To this end, I have recommended that AGC takes measures to structure its brand management. For example, stratifying the targets of communication and gaining insight into which types of targeted communication are insufficient will enable the Group to take appropriate measures. The AGC Group is focusing on external communications to heighten its visibility and on internal communications to increase employee engagement, and these efforts



are yielding results. Furthermore, I would like to see the Group develop these efforts into initiatives that foster deeper, closer relationships with its stakeholders.

In my experience, brands are established by an ability to create differentiation, a passion to demonstrate it, and an ability to pass it on.

The AGC Group can create differentiation through its excellent technologies and products, distinctive marketing, and business strength. Further, the Group's senior management team and employees are passionate about demonstrating these differentiating factors. This passion can be felt in plants and laboratories and at Board meetings. Also, the Group has a culture of passing down to junior personnel a passion for technology and a pioneering spirit that has continued without interruption since the Group's founding. In other words, the Group has a corporate culture that cherishes the outstanding aspects of the AGC brand.

With a view to further evolving this culture and thereby heightening the AGC Group's corporate value, I intend to offer my wholehearted support.

## Evaluation of the Effectiveness of the Board of Directors

AGC believes that continuously strengthening and enhancing its corporate governance is vital to achieving sustainable corporate growth and raising corporate value over the medium to long term. As part of these efforts, the Company carries out an annual analysis and evaluation of the effectiveness of the Board of Directors based on the AGC Group Corporate Governance Basic Policy, with the goal of improving the effectiveness of the Board and increasing stakeholder trust in AGC's corporate governance.

### Evaluation Method

AGC has carried out the aforementioned evaluation every year since 2016. The overall evaluation score has improved each year thanks to efforts to remedy identified issues. Moreover, approximately every three years the Company enlists the help of an external organization, thereby enhancing the objectivity of the evaluation. In 2022, an external organization was utilized for this purpose.

### Evaluation Process in 2022

#### 1 Self-evaluation based on questionnaires answered by directors and Audit & Supervisory Board members (October 2022)

The highlights of the evaluation are as follows:

- Role of the Board of Directors: roles and responsibilities of the Board of Directors and the execution side, state of deliberations, etc.
- Composition of the Board of Directors: the Board of Directors size, composition, diversity, etc.
- Operation of the Board of Directors: meeting frequency, deliberation time, selection of agenda items, support structure for outside directors, etc.
- Composition of the Audit & Supervisory Board: number of members, diversity, etc.
- Operation of advisory committees (Nominating Committee, Compensation Committee): deliberation time, selection of agenda items, provision of information, etc.

#### 2 Interviews with directors and Audit & Supervisory Board members (November 2022)

Each of our seven directors and our four Audit & Supervisory Board members were interviewed by an external organization to verify their answers to the questionnaire and elicit additional opinions.

#### 3 Discussion at the Board of Directors Meeting (January 2023)

The Board of Directors assessed the overall effectiveness and confirmed the policy for further improvement of effectiveness from the results of the questionnaire-based self-assessment and the results of the external organization's analysis of interviews as well as the confirmation of the implementation status of initiatives from 2022.

## Review of Evaluation Results and Future Initiatives

### Review of 2021 Evaluation Results

AGC has sustained diversity in the composition of its Board of Directors. Based on their unique knowledge and experience, each Board member voiced their opinions on matters related to strategies for increasing corporate value over the medium to long term, such as the business portfolio and non-financial indicators, as well as matters related to Groupwide internal controls and risk management. Lively discussions were held in an open atmosphere in small group settings. The overall effectiveness of the Board of Directors was confirmed.

### Implementation of Improvement Measures

- 1. Further strengthening of corporate governance**
  - By enhancing reporting on internal control systems, monitoring of Group governance was strengthened.
  - Regular reporting on sustainability actions was implemented, and the reporting of non-financial information was enhanced.
- 2. Further strengthening of administrative support for the Board of Directors and continued improvement of practices**
  - Improvements to the composition and content of briefing materials continued to be made. At the same time, beginning from 2022, explanatory videos with audio were distributed when providing documents in advance, and endeavors were made to improve the quality of discussions at meetings of the Board of Directors.
  - The Company strove to help outside directors better understand AGC by continuing to hold off-site meetings and strove to improve communication among directors and enliven discussions.

### Review of 2022 Evaluation Results

In AGC's Board of Directors, the supervisory and executive roles are clearly defined, and the diversity of composition is secured based on the role of the Board of Directors. Furthermore, each agenda item to be discussed by the Board of Directors is discussed and supervised in depth according to the role of the Board of Directors. In addition, AGC confirmed that the opinions of each director and other members of the Board of Directors are incorporated into the operation of the Board of Directors in a timely manner, that constant improvements are made, and that a high level of effectiveness is secured in general. The analysis by the external organization confirmed that the overall high level of effectiveness of the Board was secured, with active discussions taking place in a small group with an open atmosphere.

### Implementation of Improvement Measures

- 1. Further utilization of the knowledge of outside directors and others on important medium- and long-term management themes**
  - In 2023, the Company plans to hold Board of Directors' meetings and off-site meetings to discuss important medium- and long-term management themes, such as sustainability and the business portfolio. This will be done in conjunction with the process of formulating the next medium-term management plan, to further utilize the knowledge of outside directors and others.
- 2. Establish monitoring themes for the Board of Directors and strengthen supervisory functions**
  - AGC will enhance the reporting and discussion of non-financial information, including human capital, through regular reports on sustainability activities.
  - AGC will reinforce the monitoring of Group governance through reporting on the internal control system.
- 3. Continuously innovate agenda-setting and improve the quality of discussions**
  - AGC will continue to innovate agenda-setting for the Board of Directors meetings, including reviewing the criteria for the submission of certain items to the Board of Directors meetings to further improve the quality of discussions.
- 4. Ongoing discussions regarding the diversity of the Board of Directors and other bodies and the selection of governance style**
  - The Board of Directors will continuously discuss the diversity of the Board, including skill sets required, as well as the governance style, taking into account the strategic direction and the environment.
- 5. Continuous improvement of Board of Directors and committee operation**
  - The Company evaluates that the operation is efficient and will continue and further enhance previous initiatives, such as simplification of materials and video distribution of explanatory materials prior to meetings.
  - AGC will continue to hold off-site meetings, which we have been doing for some time, to promote understanding of the Company among outside directors, improve communication among directors, and invigorate discussions.
  - AGC will enhance opportunities for outside directors to visit the AGC Group's plants and other locations to provide information and promote understanding of its business.

## AGC's Corporate Governance System and its Features

AGC has an Audit & Supervisory Board corporate governance system and strengthens management oversight functions through the clear separation of management oversight and business execution functions. Further, the Company's basic policy is to accelerate decision-making on business execution by clearly separating corporate functions and business execution functions.

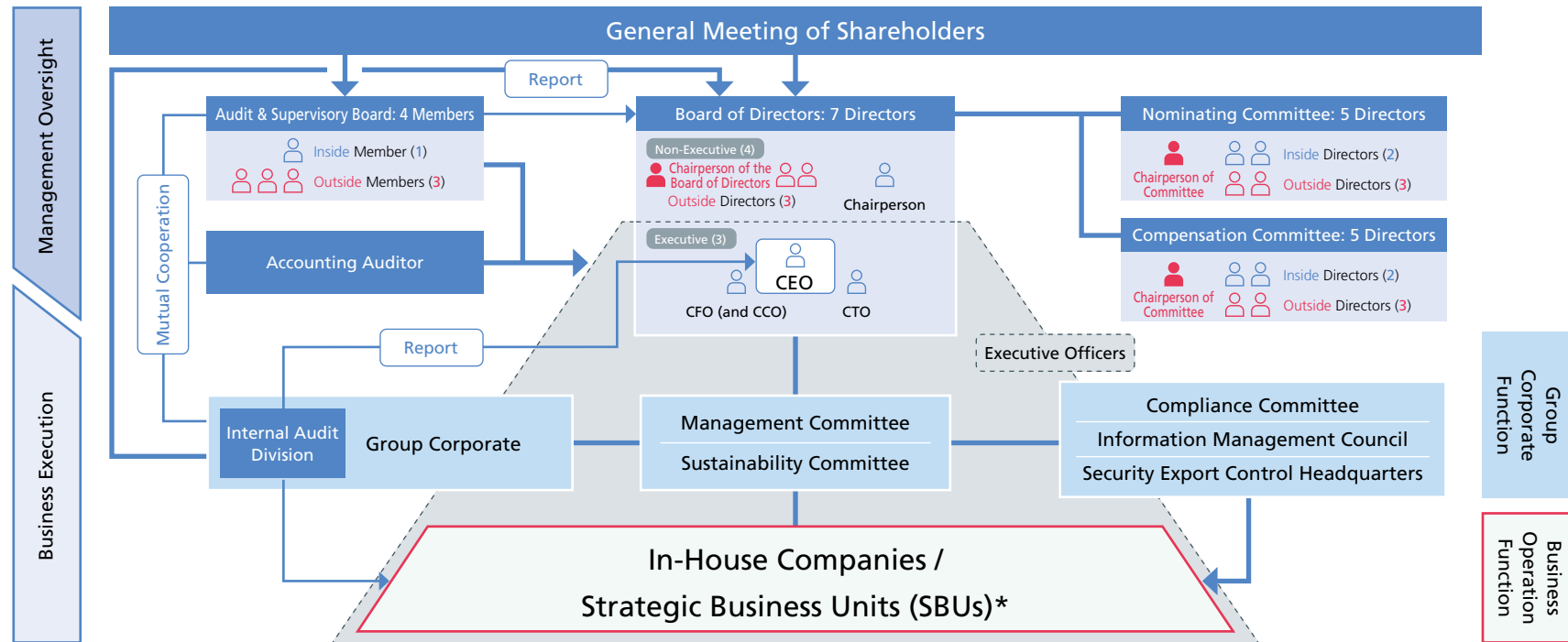


For further details, please refer to the Corporate Governance Report submitted to the Tokyo Stock Exchange.

<https://www.agc.com/en/company/pdf/governance.pdf>

### The AGC Group's Corporate Governance System (as of March 30, 2023)

Inside directors or inside Audit & Supervisory Board members Outside directors or outside Audit & Supervisory Board members who satisfy AGC's criteria for independence of outside officers



\* An in-house company is defined as a business unit that has net sales exceeding ¥200.0 billion and which conducts its business globally. As a result of the establishment of the Life Science Company on January 1, 2023, there are six In-House Companies: the Architectural Glass Asia Pacific Company, the Architectural Glass Europe & Americas Company, the Automotive Company, the Electronics Company, the Chemicals Company, and the Life Science Company, as of March 30, 2023. Business units of a smaller size than this are defined as SBUs (strategic business units), and currently there is AGC Ceramics Co., Ltd.



## Management Oversight Functions

Enhancing Management Objectivity and Transparency **Composition and Functions** **Administrative Improvement**

	Composition and Functions	Administrative Improvement
<b>Board of Directors</b>	<p>The Board of Directors, which approves the basic policies of the AGC Group and oversees its business execution, is primarily responsible for management oversight functions. Objectivity and transparency are being enhanced, based on the utilization of the following attributes of the Board.</p> <ul style="list-style-type: none"> <li>• Three out of seven directors are independent outside directors, including one female director.</li> <li>• In principle, the Board is chaired by an outside director.</li> <li>• In light of the Board's roles, a diverse composition is also ensured in relation to a skills matrix.</li> </ul>	<p><b>Evolution of Board meetings into forums for discussion by significantly reducing the time devoted to explanations</b></p> <p>As a measure to enhance the effectiveness of the Board of Directors even further, in 2022 the Company began also distributing explanatory videos with audio when providing documents in advance, thereby allowing the majority of the Board's deliberation time to be used for discussions. As a result of these initiatives, discussions at Board meetings have become lively, and directors and Audit &amp; Supervisory Board members are better able to utilize their experience and expertise in their respective roles and conduct in-depth discussions and supervision.</p>
<b>Voluntary Nominating and Compensation Committees</b>	<p>The establishment of Nominating and Compensation committees as voluntary advisory committees to the Board of Directors, as described below, heightens the objectivity of the evaluation, appointment, and compensation of directors and executive officers.</p> <ul style="list-style-type: none"> <li>• Both committees mainly comprise independent outside directors.</li> <li>• Each committee is chaired by an independent outside director.</li> <li>• The Board respects and discusses the proposals of both committees.</li> </ul>	<p><b>Invigoration of Board discussions by utilizing off-site meetings</b></p> <p>Off-site meetings invigorate discussions at Board of Directors' meetings by furthering outside directors' understanding of the AGC Group and enhancing communication among directors.</p>
<b>Audit &amp; Supervisory Board Members (Audit &amp; Supervisory Board)</b>	<p>Audit &amp; Supervisory Board members audit the performance of directors by attending important meetings, including meetings of the Board and the Management Committee, and by holding regular meetings with representative directors.</p> <ul style="list-style-type: none"> <li>• Three of the four Audit &amp; Supervisory Board members are independent outside Audit &amp; Supervisory Board members, including one female Audit &amp; Supervisory Board member.</li> <li>• There is one outside full-time Audit &amp; Supervisory Board member.</li> <li>• The two full-time Audit &amp; Supervisory Board members have extensive expertise in accounting and finance.</li> </ul>	<p><b>Enhancement of support for outside directors and outside Audit &amp; Supervisory Board members to heighten the quality of the Board's discussions and supervision even further</b></p> <p>The Corporate Planning General Division, which is the secretariat of the Board, provides notifications of Board of Directors' meetings to outside directors, delivers related documents and videos to them, and provides prior explanations of the agenda items of meetings as needed. Improvements are continuously made by incorporating the opinions of directors and Audit &amp; Supervisory Board members on administration. The Secretariat of the Audit &amp; Supervisory Board is tasked with assisting the duties of the Outside Audit &amp; Supervisory Board members, including the convening of the Audit &amp; Supervisory Board; participation in important meetings; and coordinating meetings with the representative directors, outside directors, the Internal Audit Division, and the accounting auditor.</p> <p><b>Establishment of a complete audit system through stepped-up cooperation</b></p> <p>Audit &amp; Supervisory Board members work together and enhance the effectiveness of audits by holding meetings with the accounting auditors and members of the Internal Audit Division, which executes internal audit functions; by obtaining information on the progress and results of accounting audits and internal audits; and by regularly reporting and conducting exchanges of opinions.</p>

## Business Execution Functions

The business execution function is the responsibility of executive officers below the position of president & CEO. As advisory committees to the president & CEO, the Company has established the Management Committee and the Sustainability Committee, which has an organizational rank equivalent to that of the Management Committee. These committees deliberate business management monitoring and business execution decisions, including decisions on sustainability initiatives. A system of in-house companies (quasi-subidiaries within the Group) has been introduced and a global consolidated management system has been adopted with regard to business execution. Much of the responsibility and authority for business execution has been delegated to in-house companies and strategic business units, thereby expediting the decision-making of diverse businesses.

### Business Management under the In-House Company System

AGC's in-house company system separates the roles and functions of the Group corporate divisions and business divisions (in-house companies and SBUs), and the scope of responsibility and authority is clearly defined. The Group corporate divisions maximize the corporate value of the entire Group by formulating its vision and strategies, preparing policies on the business portfolio, establishing the Group's policies on fundamental elements of business management, and providing a management platform. In-house companies and SBUs maximize their value through the use of management resources—which are provided by the Group corporate divisions—to conduct business management. The separation of the roles and functions of the Group corporate and business divisions clarifies the scope of responsibility and authority, thereby accelerating management decision-making and increasing management efficiency.

### Activities of the Sustainability Committee

The Sustainability Committee meets four times a year and comprises the CEO, CFO, CTO, Audit & Supervisory Board members, and general managers of all divisions. The committee's deliberations are reported to the Board of Directors twice a year. Additionally, the Sustainability Division, which belongs to the Corporate Planning General Division, acts as the secretariat for the Sustainability Committee and leads the formulation and execution of sustainability management strategies for the entire AGC Group.

#### Agenda Items of the Sustainability Committee in 2022

- Initiatives to combat climate change, such as the establishment of targets for Scope 3 GHG emissions and the introduction of an internal carbon-pricing system
- Initiatives for human rights issues, including human rights policy, human rights due diligence, and responsible procurement of minerals
- Progress of activities aimed at realizing sustainability targets

### Administration of the Board of Directors, Nominating Committee, Compensation Committee, and Audit & Supervisory Board in 2022

◎ Indicates chairperson

Composition	Board of Directors		Nominating Committee		Compensation Committee		Audit & Supervisory Board	
	Inside	Outside	Inside	Outside	Inside	Outside	Inside	Outside
Director	Takuya Shimamura	○ (Nonexecutive)	○		○			
	Yoshinori Hirai	○	○		○			
	Shinji Miyagi	○						
	Hideyuki Kurata	○						
	Hiroyuki Yanagi		◎		○		○	
	Keiko Honda		○		◎		○	
	Isao Teshirogi* <sup>1</sup>		○		○		◎	
Audit & Supervisory Board member	Yoshiyuki Morimoto* <sup>2</sup>							◎ Full-time
	Tetsuo Tatsuno						○ Full-time	
	Yaeko Takeoka* <sup>2</sup>							○
	Tatsuro Ishizuka* <sup>1</sup>							○
<b>Members</b>	7 (including 3 outside directors)		5 (including 3 outside directors)		5 (including 3 outside directors)		4 (including 3 outside Audit & Supervisory Board members)	
<b>Discussion topics (Audit matters discussed by the Audit &amp; Supervisory Board)</b>	Oversaw the business execution of the AGC Group, decided on director candidates, nominated and decided on executive officers for the coming year, and approved significant matters, such as budgets and the acquisition and disposal of important assets		Selected director candidates, Audit & Supervisory Board members, and executive officers for the coming year; evaluated the president & CEO's performance and decided on reappointment; considered succession planning for the president & CEO, other directors, and Audit & Supervisory Board members		Deliberated on the planned bonus and stock-based compensation amounts to be paid to directors and executive officers, the establishment of targets for performance-linked compensation, and the revision of the compensation system for directors and Audit & Supervisory Board members, and also submitted proposals to the Board of Directors		Conducted audits systematically and efficiently in accordance with a basic policy on audits of properly overseeing and verifying whether the internal control system set out in the basic policy on the internal control system—which includes the compliance system, the risk management system, and the system for ensuring the accuracy of the consolidated financial statements—was adequate and functioning appropriately on a Groupwide basis	
<b>Meetings</b>	14		10		9		14	

\*1 Appointed on March 30, 2022

\*2 Retired on March 30, 2023

Compensation System

Basic Philosophy on the Compensation System

In its Compensation Principles, the AGC Group sets out its basic stance and philosophy on overall compensation for officers as follows.

- The compensation system shall be one that enables the Company to attract, secure, and reward diverse and talented personnel, in order to establish and expand the Company’s competitive edge over its peers.
- The compensation system shall be one that promotes continued improvement of corporate value, thereby allowing shareholders and management to share gains.
- The compensation system shall be one that engenders motivation to achieve performance goals related to management strategies for the AGC Group’s continuous development.
- The decision-making process of determining compensation shall be objective and highly transparent.

Compensation Determination Method

The Compensation Committee deliberates on matters such as the compensation system and compensation amounts for directors and executive officers based on the Compensation Principles, makes proposals in that regard to the Board of Directors, and verifies the results of compensation payments in order to increase the objectivity and transparency of the compensation determination process.

Compensation to Directors and Audit & Supervisory Board Members (2022)

	Number of recipients	Total payment (millions of yen)		Number of recipients	Total payment (millions of yen)
All directors	8	662	All Audit & Supervisory Board members	5	100
Outside directors only*	4	57	Outside Audit & Supervisory Board members only*	4	64

\* Including one director and one Audit & Supervisory Board member who retired in March 2022

Composition of Compensation

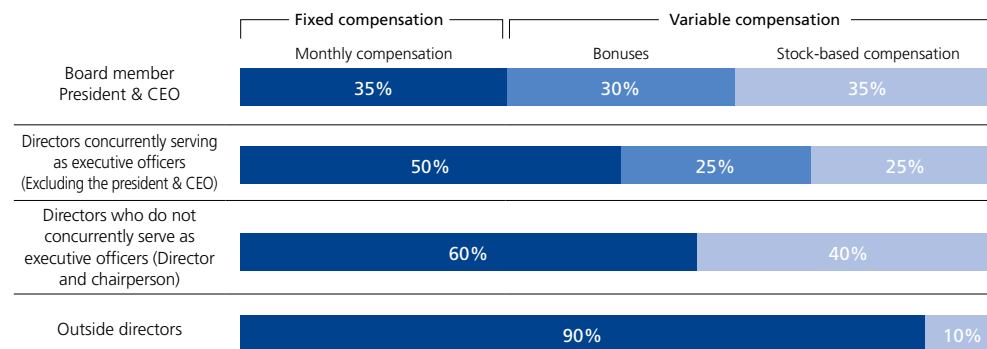
For the AGC Group, which provides materials and solutions that aim to realize product development from a long-term perspective, medium- to long-term technological development and investments in human resources and equipment are sources of competitiveness in addition to the Group’s single-year business strategy. Accordingly, the Group has introduced an incentive system as one of the means for AGC’s executive officers to take a balanced view of the short, medium, and long term and to further motivate them to achieve their goals for each time frame.

In addition to bonuses linked to organizational performance in a single year, the Group has introduced stock-based compensation, in which the number of shares granted is determined on the basis of performance and other factors within the period of a given medium-term management plan. Under the stock-based compensation system, executive officers granted shares must retain them during their terms of office, with the aim of motivating them to contribute to the improvement of corporate value over the medium to long term and to create shared interests between executive officers and shareholders.

In January 2023, the Company made the following changes to improve the effectiveness of its compensation system, in accordance with its Compensation Principles.

- With respect to the composition of the compensation of the president & CEO, the percentage of stock-based compensation was increased with the aim of heightening the percentage of variable compensation.
- Regarding compensation levels, in order to further increase the relevance to the medium-term management plan, a benchmark period for executive compensation is implemented for each period of the medium-term management plans.

Composition of Executive Compensation



Note: If none of the above applies, the matter is discussed within the Compensation Committee and the Board of Directors makes a resolution.

Variable Compensation

	Bonuses	Stock-based compensation
<b>Overview</b>	An amount according to each executive officer's position is adjusted in accordance with the level of consolidated performance indicators for a single year, in order to further enhance their motivation to achieve performance goals for a single year.	The plan is intended to enhance the motivation to contribute to medium- to long-term improvements in corporate value and to promote a sharing of interests with shareholders, as well as to further enhance the motivation to achieve the performance goals in the medium-term management plan. Compensation under the plan consists of a performance-linked component, whereby the Company issues AGC shares—the number of which varies in accordance with each executive officer's position and their level of achievement of the consolidated performance indicators in the medium-term management plan—and a fixed component, whereby a fixed number of AGC's shares are issued in accordance with each executive officer's position.
<b>Performance Indicators</b>	Performance indicators shall be return (operating profit) on capital employed (calculated by dividing operating profit by operating assets) and cash flows, given the importance of improving business profitability and asset efficiency, as well as of generating cash flows.	Performance indicators shall be return (operating profit) on capital employed (calculated by dividing operating profit by operating assets) to encourage achievement of the target for ROE—an important performance target in the medium-term management plan—and EBITDA, in consideration of the importance of achieving sustainable corporate profitability. Return (operating profit) on capital employed and EBITDA each account for 50% of the performance-linked component.
<b>Variable Elements</b>	The amount shall vary in accordance with the level of achievement of the target for return (operating profit) on capital employed and the level of improvement of cash flows compared with the previous year. Further, the amount shall vary within a range of 0% to 200% of the standard payment amount, in principle, with consideration for factors including the Companywide performance, the improvement of non-financial capital and progress on business portfolio conversion, as well as individual performance.	The performance-linked component is calculated as a weighted average with prescribed ratios (25% for the first year, 25% for the next year, and 50% for the final year) regarding the level of achievement of these indicators in each year during the medium-term management plan. In principle, the amount shall vary within a range of 0% to 200% of the standard amount. Executive officers shall continue to hold AGC shares acquired through the stock-based compensation system following the conclusion of the medium-term management plan until they retire from office.
<b>Compensation Results Based on 2022 Performance Indicators</b>	<p>2022 Results</p> <ul style="list-style-type: none"> <li>The operating profit as a percentage of operating assets indicator was 8.4%, compared with a target of 9.4% (based on operating assets before impairment).</li> <li>The cash flow indicator declined year on year.</li> <li>In light of the two indicators above and a Groupwide extraordinary evaluation, bonuses to be paid to directors serving concurrently as executive officers were set at 93% of the standard payment amount.</li> </ul>	<p>2022 Results</p> <ul style="list-style-type: none"> <li>Return (operating profit) on capital employed was 2.9% in 2022, the second year of the medium-term management plan.</li> <li>EBITDA totaled ¥369.6 billion in 2022, the second year of the medium-term management plan.</li> </ul>
<b>Target</b>	2023 Target Operating profit as a percentage of operating assets and cash flows will be used as performance indicators due to the importance of increasing the profitability and asset efficiency of businesses and generating cash flows.	Medium-Term Management Plan (2023) Targets Levels of return (operating profit) on capital employed and EBITDA generally equivalent to an ROE of 8%, a 2023 target in the medium-term management plan, are set as the baseline for targets. The target for return (operating profit) on capital employed is 7.0% or higher, while the EBITDA target is ¥344.0 billion or more.

Note EBITDA: Calculated simply by adding operating profit and depreciation

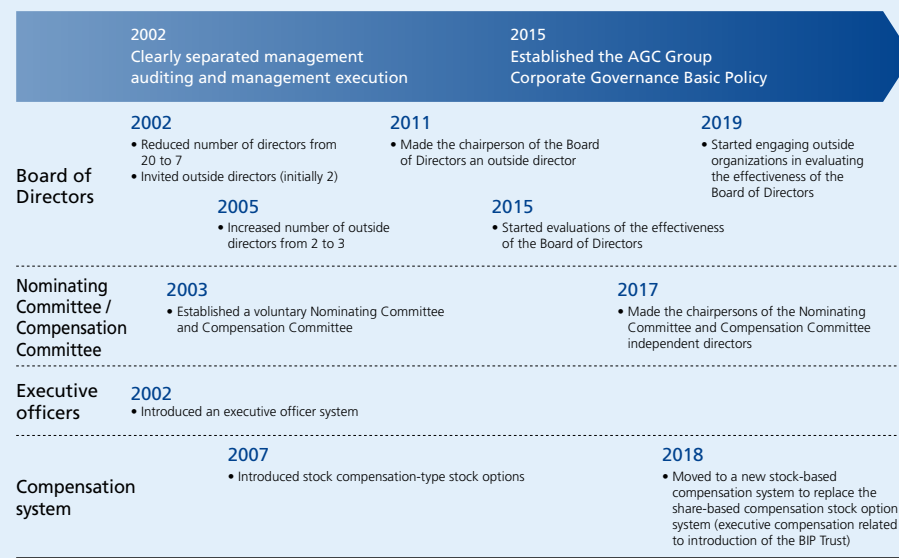
Toward Further Incorporation of Non-Financial Indicators

In the current compensation system for directors and Audit & Supervisory Board members, the improvement of non-financial capital is included as an evaluation item for directors' bonuses. AGC is considering the incorporation of new non-financial indicators into a stock-based compensation system that is linked to the new medium-term management plan, which will commence from 2024.

Improvements in Corporate Governance

AGC has been working to strengthen and enhance its corporate governance since 2002. The Company added two outside directors in 2002. The AGC Group established a voluntary Nominating Committee and Compensation Committee in 2003, and in 2005 it implemented progressive activities such as appointing three independent directors. In 2011, an independent director was appointed as chairperson of the Board of Directors in order to further enhance the objectivity and transparency of management. With respect to the AGC Group Corporate Governance Basic Policy established in 2015, the Company revises the policy as appropriate in light of social expectations. For example, in 2023 the Company made revisions such as expanding sustainability-related descriptions. Going forward, the Company will continue to evolve its corporate governance system.

History of AGC's Governance Reforms



For details on the AGC Group Corporate Governance Basic Policy, please visit the website below.

[https://www.agc.com/en/company/pdf/governance\\_basic\\_e.pdf](https://www.agc.com/en/company/pdf/governance_basic_e.pdf)

## Chairperson of Nominating Committee

### A Message from Outside Director Keiko Honda

#### Keiko Honda

Chairperson of Nominating Committee

Before becoming an adjunct professor specializing in environmental, social, and governance (ESG)-related investment at Columbia University in the United States, Keiko Honda was engaged for many years in consulting work on corporate strategy, M&As, and alliances at McKinsey & Company, Inc., and other firms, in addition to serving as the representative of a multinational organization. Utilizing her extensive knowledge on the management of corporations and global organizations, she provides expert recommendations on AGC's overall business management. Years of service as a director: Three (as of March 30, 2023)



#### Governance

For many years, independent outside directors have chaired AGC's Board of Directors, Nominating Committee, and Compensation Committee. Such extensive use of independent outside directors is unusual for a Japanese company and is one of the reasons why the Board has become ever more effective. Further, I believe that the prominence of independent outside directors is an indication of the Company's commitment to heightening management transparency. In addition, devoting more time to briefings prior to Board meetings—a measure taken in accordance with a proposal submitted by Hiroyuki Yanagi, chairperson of the Board—has increased the time available for deliberation, greatly enhanced the efficiency of proceedings, and encouraged frank, lively discussions at Board meetings.

#### Review of My First Year as Nominating Committee Chairperson

In serving as chairperson of the Nominating Committee, I began by informing Yoshinori Hirai, the president & CEO, about the issues that I felt should be addressed. A year has passed since then, and I believe that we need to expedite the development of next-generation leaders. In recent years, the roles required of CEOs have been increasing. Amid significant socioeconomic changes, including faster technological innovation and the emergence of geopolitical risks, CEOs must take a medium- to

long-term view of trends in the economy and technological innovation, undertake analysis and planning with respect to the strategic options that are available, and then make management decisions accordingly. In addition, CEOs must motivate employees and manage organizations so that they deliver results. In particular, as the AGC Group is involved in a wide range of business fields, the Group's president & CEO is required to perform in an extremely wide variety of roles.

#### Skills Required of Next-Generation Leaders

I would like candidates for next-generation leadership positions to develop an awareness of their responsibilities as leaders and to hone their skills from early on so that they can deliver results. Encouraging such candidates to acquire the skill sets of effective leaders is an important role of the Nominating Committee. As they will be tasked with building a global business portfolio, leaders of the AGC Group must have particular competence in analyzing management resource allocation and fostering and utilizing human resources.

#### Three Key Points for Business Strategy

In closing, I would like to make three key points about sustaining the growth of the AGC Group. First, I hope that the Group invests sufficient management resources in R&D and promotes “organizational ambidexterity” even further. The efforts of the senior management team—including Yoshinori Hirai in his capacity as the president & CEO—have resulted in the remarkable growth of Strategic Businesses and given the AGC Group an international reputation as the best practitioner of “organizational ambidexterity” among Japanese companies. My second point concerns the need to improve asset efficiency. Efforts are steadily being made to heighten awareness of asset efficiency. For example, with a view to improving ROE, return on capital employed (ROCE) has been incorporated as an important determinant of executive compensation. As initiatives to improve asset efficiency directly enhance corporate value, I look forward to seeing the Group continue in this direction. Thirdly, I would like to see an emphasis on climate change measures. From an early stage, the AGC Group recognized the importance of sustainability. Given the long-term impact of climate change measures on corporate value, the Group has made clear commitments, such as setting GHG emissions reduction targets. Going forward, concrete efforts to achieve these targets will be crucial. I will also develop my own capabilities so that I can better support business strategies that are based on the aforementioned three points and that contribute to the sustained growth of the AGC Group.

## Chairperson of the Nominating Committee

### A Message from Outside Director Isao Teshirogi



#### Isao Teshirogi

Chairperson of Nominating Committee

In 2008, Isao Teshirogi was appointed representative director, president and CEO of Shionogi & Co., Ltd., a drug discovery-based pharmaceutical company focused on high-value-added products and services. By utilizing his wealth of experience in overall corporate management, including the management of overseas business operations, he oversees and monitors the management of the Company from an independent standpoint and submits proposals on the overall management of the Company, including the development of its Strategic Businesses. Years of service as a director: One (as of March 30, 2023)

#### Emphasizing Discussion in Board Administration

At the same time as I became an outside director, Hiroyuki Yanagi, who had previously served as an outside director for three years, was appointed chairperson of the Board of Directors. I sensed that he clearly intended to make Board meetings a forum for substantive discussions. As well as being ethical and insightful, he excels at creating an atmosphere that encourages Board members to speak up. His efforts have resulted in highly effective Board meetings, where everyone participates and deliberates actively, without distinction between inside and outside directors or between directors and Audit & Supervisory Board members. AGC's Board is very unusual as it comprises three inside directors who also serve as executive officers, three outside directors, and one director who does not serve as an executive officer, namely the chairperson, Takuya Shimamura. Adopting a stance similar to that of an outside director, the chairperson is uncompromising when stating opinions, which further enriches discussions at Board meetings. In addition, incorporating videos and other measures to improve the quality of prior briefings has enabled us to devote the majority of the Board's meeting time to discussion.

#### Developing a Fair Compensation System

As chairperson of the Compensation Committee, I believe there are several issues to be addressed. First, given the wide range of businesses and geographic regions encompassed by the AGC Group, how best to evaluate such factors and fairly reflect them in compensation is a question that my predecessor Keiko Honda also spent a significant amount of time considering. Further, capital markets want increases in the percentages of executive compensation accounted for by variable compensation, and we must take measures pursuant to such expectations. However, simply raising the percentage of variable compensation is not enough; we must clarify the link between evaluations and compensation. For example, variable compensation can be broken down into bonuses and stock-based compensation. Bonuses should be linked to evaluations of short-term performance, while stock-based compensation should reflect evaluations of medium- to long-term performance. In measuring medium- to long-term performance, moreover, we are considering increasing the weight given to non-financial factors as key performance indicators (KPIs). At present, discussions are underway regarding the enhancement of non-financial KPIs in the next medium-term management plan.

#### Contributing to Heightened Corporate Value

One of my most important responsibilities as an outside director is boosting market capitalization—an indicator of corporate value. To begin with, I would like to see AGC become one of the top 100 companies in Japan in terms of market capitalization. However, the Group's current price/book value ratio (PBR) is less than 1.0 time. The lowness of this ratio is partly attributable to the conglomerate discount phenomenon. On the other hand, "organizational ambidexterity" for which the AGC Group has become renowned is a management practice that has only been made possible by the Group's diverse business portfolio. Additionally, Japanese companies in the materials industry typically have PBRs below 1.0 time. To a large extent, these persistently low PBRs result from the nature of materials businesses. Precisely for this reason, *business portfolio transformation* is critical, and AGC's focus on increasing earnings from Strategic Businesses is steadily achieving results. Looking at the Group from an external perspective, in addition to the growth potential of Strategic Businesses, Core Businesses also have many growth areas. The Group should identify these areas, prioritize them, and allocate management resources accordingly.

Another area that I would like the Group to focus on is diversity, equity, and inclusion. Although the Group is already implementing initiatives in line with concrete plans for the promotion of women and non-Japanese employees to key positions, the pace of initiatives needs to be increased. When doing so, the most important thing is not only to consider external attributes such as gender and nationality but also to recognize the diverse individuality of employees, treat people equally, and make appropriate personnel appointments that match the overall attributes of each person. While initiatives to address such issues as climate change are important for corporate sustainability, how human capital is utilized is also of vital importance. With this in mind, I intend to help accelerate initiatives for diversity, equity, and inclusion.

The AGC Group's Corporate Governance System

The AGC Group has set forth the promotion of sustainability management as one of its strategies in **AGC plus-2023**, its medium-term management plan. Taking this into consideration, the Group is working to further strengthen its corporate governance. Specifically, to prevent scandals and compliance violations at its subsidiaries, the AGC Group has established management regulations on the governance and internal control systems thereof and implements any measures deemed necessary. The Group's basic approach is for the parent company, AGC, to resolutely carry out management oversight of its subsidiaries while emphasizing the autonomous functioning of the Board of Directors and internal control system of each subsidiary.

The system for ensuring appropriate operations is as follows.

- With respect to governance, AGC conducts management oversight and supervision with objectivity and independence by dispatching an individual who previously served as president (or of a similar executive position) at a subsidiary, and who also belongs to one of the corporate divisions of AGC, to major subsidiaries in Japan and overseas as a temporary director-cum-auditor.
- In accordance with the AGC Group Enterprise Risk Management Basic Policies, risk management is conducted through the identification of risks that could hinder the achievement of the Group's management targets, the implementation of management aimed at mitigating the materialization of such risks, and the implementation of countermeasures when such risks materialize.

<b>Management to mitigate risk materialization</b>	Management is conducted based on a system designed to regularly identify and update risks and classify them appropriately. Specifically, after ascertaining the status of risk management by having affiliated companies conduct periodic self-assessment, the relevant AGC corporate and business divisions collaborate to strengthen and implement risk countermeasures, thereby improving risk management in the following year.
<b>Countermeasures when risks materialize</b>	A reporting line and a system that facilitates prompt and appropriate initial responses are in place.

- Regarding its compliance system, AGC implements initiatives for ensuring observance of the AGC Group Code of Conduct and for raising awareness of and providing education on the code. The Group has also established a helpline, the operational conditions and status of consultations of which are reviewed and reported to the Board of Directors. In addition, the AGC Group maintains its compliance system by periodically carrying out compliance awareness surveys.



For information on the overall risk management system and specific short-, medium-, and long-term risks:

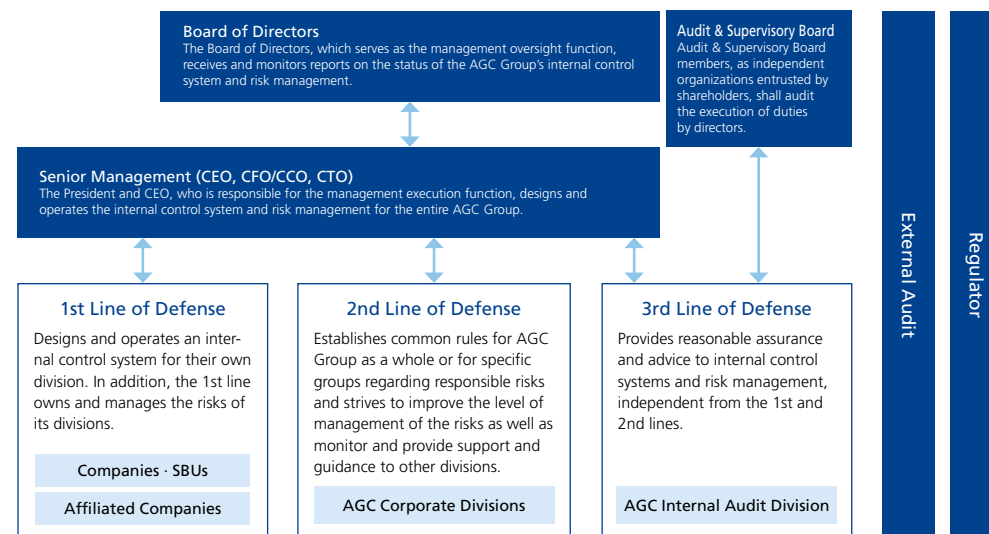
<https://www.agc.com/en/ir/policy/risk/index.html>



For information on the AGC Group's Corporate Policy on Internal Control:

<https://www.agc.com/en/company/internalcontrol/index.html>

AGC Group Three Lines of Defense Model



Notes 1: The AGC Group has designated risks that are assumed to significantly affect the management of the AGC Group when they are manifested as "material risk factors" in "AGC Group Enterprise Risk Management Basic Policies."  
 2: In-house Companies and SBUs have established various systems for managing affiliated companies, including a "2nd line of defense" function (in such organizations as Business Planning & Administration Office, CSR Office) for them. The AGC Corporate Divisions provide support and guidance to affiliated companies in cooperation with these organizations.

Post-Merger Integration in Mergers and Acquisitions

Since formulating its **AGC plus** Management Policy in 2015, the AGC Group has expanded its business through proactive mergers and acquisitions (M&As) in Strategic Businesses. With a view to making use of M&As, the Group has also laid out a strategy in **AGC plus-2023** of accelerating business growth in Strategic Businesses and searching for new businesses.

Regarding M&As, it is vital to achieve a smooth post-merger integration (PMI) process that helps deliver business synergies and maximize corporate value for the Group. In everything from management policy formulation to governance, management resources, and risk management, the AGC Group has established Group common practices and functions as important matters that make up its Groupwide foundations, which serve as common guidelines when implementing PMIs. Based on these practices and functions, business divisions and other bodies within the Company gradually integrate companies acquired through M&As, beginning with key functions such as finance and accounting, sales systems and branding, quality assurance, and management accounting. We engage in dialogue with acquired companies and generally complete the integration process in less than six months, following which we periodically monitor the status of integration. In addition, we improve organizational knowledge as a group by carrying out reviews at meetings of the Management Committee and the Board of Directors, which include progress on PMI status for important projects within one to two years following integration.

# Board of Directors, Audit & Supervisory Board Members, and Executive Officers (As of March 30, 2023)

## Board of Directors and Audit & Supervisory Board Members

**Takuya Shimamura**  
Director, Chairperson



**Apr. 1980** Joined Asahi Glass  
**Jan. 2009** Executive Officer and GM of Planning & Coordination Office, Chemicals Company  
**Jan. 2010** Executive Officer and Chemicals Company President  
**Jan. 2013** Senior Executive Officer and Electronics Company President  
**Jan. 2015** President & CEO  
**Mar. 2015** Representative Director and President & CEO  
**Jan. 2021** Representative Director and Chairperson  
**Mar. 2021** Director and Chairperson (current position)

**Yoshinori Hirai**  
Representative Director,  
President & CEO



**Apr. 1987** Joined Asahi Glass  
**Jan. 2012** Executive Officer and GM of Business Development Office  
**Jan. 2014** Senior Executive Officer and GM of Technology General Division  
**Mar. 2014** Director and Senior Executive Officer and CTO, GM of Technology General Division  
**Jan. 2016** Director and Senior Executive Officer, CTO, GM of Technology General Division  
**Jan. 2018** Representative Director and Executive Vice President and CTO, GM of Technology General Division  
**Jan. 2019** Representative Director and Executive Vice President and CTO  
**Jan. 2021** Representative Director and President & CEO (current position)

**Shinji Miyaji**

Representative Director  
and Senior Executive  
Vice President, CFO,  
CCO



**Aug. 1990** Joined Asahi Glass  
**Jan. 2010** Executive Officer and Group Leader of Corporate Planning Group, Office of the President  
**Nov. 2012** Executive Officer and Senior Vice President of AGC Flat Glass North America, Inc.  
**Feb. 2013** Executive Officer and Regional President of North America, Glass Company  
**Oct. 2013** Executive Officer and GM of Strategy Office, Glass Company  
**Jan. 2014** Executive Officer and GM of Electronics General Division, Electronics Company  
**Jan. 2015** Senior Executive Officer and GM of Office of the President  
**Mar. 2015** Director and Senior Executive Officer and GM of Office of the President

**Jan. 2016** Director and Senior Executive Officer, CFO and GM of Corporate Planning Division  
**Jan. 2018** Representative Director and Executive Vice President, CFO and CCO  
**Oct. 2019** Representative Director and Executive Vice President, CFO and CCO, GM of Corporate Planning General Division  
**Mar. 2020** Representative Director and Senior Executive Vice President, CFO, CCO and GM of Corporate Planning General Division  
**Jan. 2023** Representative Director and Senior Executive Vice President, CFO and CCO (current position)

**Hideyuki Kurata**

Representative Director,  
Executive Vice President,  
CTO, GM of Technology  
General Division



**Apr. 1987** Joined Asahi Glass  
**Jan. 2018** Executive Officer and GM of Life Science General Division, Chemicals Company  
**Jan. 2019** Senior Executive Officer and GM of Technology General Division  
**Jan. 2021** Senior Executive Officer, CTO, and GM of Technology General Division  
**Mar. 2021** Director, Senior Executive Officer, CTO, and GM of Technology General Division (current position)  
**Jan. 2022** Director, Executive Vice President and CTO, GM of Technology General Division  
**Mar. 2022** Representative Director, Executive Vice President and CTO, GM of Technology General Division  
**Apr. 2022** Representative Director, Executive Vice President and CTO, GM of Technology General Division, GM of Business Development Division  
**Jan. 2023** Representative Director, Executive Vice President and CTO, GM of Technology General Division (current position)

**Hiroyuki Yanagi**

Outside Director,  
Chairperson of the Board  
of Directors, Member of  
Nominating Committee  
and Compensation  
Committee



**Apr. 1978** Joined Yamaha Motor Co., Ltd.  
**Mar. 2007** Executive Officer of said company  
**Mar. 2009** Senior Executive Officer of said company  
**Mar. 2010** President & CEO and Representative Director of said company  
**Jan. 2018** Chairperson and Representative Director of said company  
**Mar. 2019** Director at AGC (current position)  
**Mar. 2021** Chairperson and Director, Yamaha Motor Co., Ltd.  
**Jan. 2022** Director of said company  
**Mar. 2022** Advisor of said company (current position)

**Keiko Honda**

Outside Director,  
Chairperson of  
Nominating  
Committee, Member  
of Compensation  
Committee



**Apr. 1984** Joined Bain & Company Japan Incorporated  
**May 1986** Joined Shearson Lehman Brothers Securities Co., Ltd.  
**Jul. 1989** Joined McKinsey & Company, Inc., Japan  
**Jul. 1999** Partner of said company  
**Jul. 2007** Director (Senior Partner) of said company  
**Jul. 2013** Executive Vice President & CEO of Multilateral Investment Guarantee Agency, World Bank Group  
**Oct. 2019** Retired from said agency  
**Jan. 2020** Adjunct Professor of Columbia University in the United States (current position)  
**Mar. 2020** Director at AGC (current position)

**Isao Teshirogi**

Outside Director,  
Chairperson of  
Compensation  
Committee,  
Member of Nominating  
Committee



**Apr. 1982** Joined Shionogi & Co., Ltd.  
**Jun. 2002** Director of said company  
**Apr. 2004** Director and Executive Officer of said company  
**Apr. 2006** Director and Senior Executive Officer of said company  
**Apr. 2008** Representative Director, President & CEO of said company  
**Mar. 2022** Director, AGC (current position)  
**Jul. 2022** Chairman of the Board, Representative Director, President and CEO, Shionogi & Co., Ltd. (current position)



**Tetsuo Tatsuno**

Full-time Audit &  
Supervisory Board  
Member

**Isamu  
Kawashima**

Full-time Audit &  
Supervisory Board  
Member (Outside)

**Tatsuro Ishizuka**

Audit & Supervisory  
Board Member (Outside)

**Haruka  
Matsuyama**

Audit & Supervisory  
Board Member (Outside)



**Apr. 1982** Joined AGC  
**Jan. 2009** Executive Officer and GM of Finance & Accounting Center  
**Jul. 2009** Executive Officer and Deputy GM of Finance & Control Office  
**Apr. 2010** Executive Officer and Vice President, Planning and Coordination, Glass Company  
**Jan. 2013** Executive Officer and GM of Finance & Control Office  
**Jan. 2015** Senior Executive Officer and GM of Finance & Control Office  
**Jan. 2016** Senior Executive Officer and GM of Finance & Control Division  
**Jan. 2017** Senior Executive Officer and Assistant to CEO  
**Mar. 2017** Full-time Audit & Supervisory Board Member (current position)

**Apr. 1981** Joined NEC Corporation  
**Jun. 2011** General Manager, Corporate Controller Division, General Manager, Internal Control over Finance Reporting Division and Member of the Board of said company  
**Jul. 2011** Senior Vice President, CFO and Member of the Board of said company  
**Apr. 2015** Executive Vice President, CFO and Member of the Board of said company  
**Apr. 2017** Representative Executive Vice President, CFO and Member of the Board of said company  
**Jun. 2018** Audit & Supervisory Board Member of said company  
**Jun. 2022** Retired from said company  
**Mar. 2023** Full-time Audit & Supervisory Board Member (current position)

**Apr. 1978** Joined Hitachi, Ltd.  
**Apr. 2011** Vice President and Executive Officer of said company  
**Apr. 2013** Senior Vice President and Executive Officer of said company  
**Apr. 2014** Representative Executive Vice President and Executive Officer of said company  
**Apr. 2015** Director and Deputy Chairperson, Hitachi Europe Ltd.  
**Jul. 2016** Director and Chairperson, Hitachi Research Institute  
**Apr. 2017** Representative Executive Officer and Chairperson, Hitachi Construction Machinery Co., Ltd.  
**Jun. 2017** Director, Representative Executive Officer and Chairperson of said company  
**Apr. 2019** Director of said company  
**Jun. 2019** Retired from said company President, The Hitachi Global Foundation  
**Mar. 2022** Audit & Supervisory Board Member (current position)  
**Jun. 2022** Retired from position of President, The Hitachi Global Foundation

**Apr. 1995** Appointed as Assistant Judge, Tokyo District Court  
**Jul. 2000** Registered as Lawyer (Daini Tokyo Bar Association) Joined Hibiya Park Law Offices  
**Jan. 2002** Partner, Hibiya Park Law Offices (current position)  
**Mar. 2023** Audit & Supervisory Board Member (current position)

**Executive Officers****President & CEO****Yoshinori Hirai****Senior Executive Vice President****Shinji Miyaji**

CFO, CCO

**Executive Vice Presidents****Masao Nemoto**

President of Chemicals Company

**Kenzo Moriyama**

President of Electronics Company

**Hideyuki Kurata**

CTO, GM of Technology General Div.

**Senior Executive Officers****Shigekuni Inoue**

GM of EHSQ General Div., GM of AGC Yokohama Technical Center

**Toshiro Kasuya**

GM of Finance &amp; Control Div.

**Yoshio Takegawa**

President of Automotive Company

**Junichi Kobayashi**

GM of Human Resources Div.

**Nobuyuki Suzuki**

GM of Electronic Materials General Div., Electronics Company

**Tadashi Murano**

GM of Corporate Planning General Div

**Noriyuki Komuro**

President of Life Science Company

**Davide Cappellino**

President of Architectural Glass Europe &amp; Americas Company

**Executive Officers****Tatsuo Sugiyama**

GM of Technology Office, Automotive Company

**Jean-Marc Meunier**

Regional President for Europe, Automotive Company

**Toshihiro Ueda**

Chief Representative of AGC Group for China

**Atsushi Ichikawa**

Senior Vice President, Architectural Glass Europe &amp; Americas Company

**Satoshi Takada**

GM of Multi-Material General Div., Electronics Company

**Hiroki Kamiya**

GM of Innovative Technology Laboratories, Technology General Div.

**Shinya Mine**

GM of Production Technology Div., Technology General Div.

**Naoko Araki**

GM of Internal Audit Div.

**Masaru Ota**

President of AGC Ceramics Co., Ltd.

**Takashi Narushima**

GM of Global OEM Management Office, Automotive Company

**Hiroyuki Ohtani**

Regional President for Asia, Automotive Company

**Shigeki Yoshiba**

President of Architectural Glass Asia Pacific Company

**Shunsuke Yokotsuka**

GM of Materials Integration Laboratories, Technology General Div.

**Seigo Iwakura**

GM of Purchase &amp; Logistics Div.

**Tatsuo Momii**

GM of Performance Chemicals General Div., Chemicals Company

**Yasuyuki Ueda**

GM of Production Management General Div., Chemicals Company

**Yoshihisa Horibe**

GM of Essential Chemicals General Div., Chemicals Company

**Mitsuru Furuta**

GM of Display Glass General Division, Electronics Company

**Hiroaki Sano**

GM of Corporate Administration Division, Corporate Planning General Division

**Yuriko Kaida**

GM of Planning Division, Technology General Division

**Hiroshi Wakatsuki**

GM of Business Development Division

**Patricio Massera**

AGC Biologics CEO, Life Science Company

Skills of Directors and Audit & Supervisory Board Members

Name	Position	Global corporate management	Legal affairs and internal controls	Finance and accounting	Sales and marketing	Production and R&D	IT and digital transformation	Sustainability	Business development
Takuya Shimamura	Representative director	●			●			●	
Yoshinori Hirai	Representative director, president & CEO	●			●	●	●	●	●
Shinji Miyaji	Representative director CFO, CCO	●	●	●			●	●	●
Hideyuki Kurata	Representative director, CTO	●			●	●	●	●	●
Hiroyuki Yanagi	Outside director	●			●	●	●	●	
Keiko Honda	Outside director	●		●				●	
Isao Teshirogi	Outside director	●			●	●		●	●
Tetsuo Tatsuno	Full-time Audit & Supervisory Board member	●	●	●					
Isamu Kawashima	Full-time Audit & Supervisory Board member	●	●	●				●	
Tatsuro Ishizuka	Audit & Supervisory Board member	●				●	●	●	
Haruka Matsuyama	Audit & Supervisory Board member		●					●	

Reason for Selection of Each Skill and Definitions of Skills

The AGC Group uses a skills matrix for the purpose of verifying whether human resources are being properly selected by providing a visual representation to determine if the compositions of the Board of Directors and Audit & Supervisory Board are well balanced in terms of knowledge, skills, and experience. There are eight skill categories that relate to corporate governance, strategic coherence, and business characteristics. The Company examines whether it is necessary to reassess these skills when the corporate governance structure changes and when new medium-term management plans are formulated.

	Skills	Definitions of skills
Basic specialized skills	<b>Global corporate management</b>	The ability to manage a corporation from a global perspective, the perspective of business portfolios, and human resource management
	Global management	The ability to manage a corporation from a global perspective
	Business portfolio management	The ability to optimally allocate management resources while considering an optimal balance of businesses
	Human resource management	The ability to nurture and manage human resources related to management strategy
	<b>Legal affairs and internal controls</b>	The ability to properly understand and manage risks with knowledge of legal matters and internal controls
Diverse specialized skills	<b>Finance and accounting</b>	The ability to propose financial strategies linked to management strategies with knowledge of financial and accounting matters
	<b>Sales and marketing</b>	The ability to propose sales and marketing strategies while understanding the needs of customers
	<b>Production and R&amp;D</b>	The ability to develop new products through research and technological innovation, as well as to operate and improve production systems
	Production	The ability to manage and reform production organizations with knowledge of manufacturing technologies, as well as of production and quality management
	R&D	The ability to develop new products using research and technological innovation
	<b>IT and digital transformation</b>	The ability to reform business models and business processes using data and digital technologies
	<b>Sustainability</b>	The knowledge of sustainability necessary to balance the realization of the sustainable development of society and the sustainable growth of the AGC Group
	Environment	The knowledge necessary to balance a sustainable global environment with the sustainable growth of a corporation
	Non-environment	The knowledge necessary to balance the sustainable growth of a corporation with domains other than a sustainable global environment
<b>Business development</b>	The ability to create and promote new businesses while understanding the needs of customers	

Perspectives

1 Corporate Governance

Aligned with functions required by the Board of Directors (advisory and monitoring)

2 Strategic Coherence

Key strategies of **AGC plus-2023**

- Pursuing “Organizational Ambidexterity”
- Promoting Sustainability Management
- Gaining Competitiveness by Accelerating Digital Transformation

3 Business Characteristics

Includes diverse specialized skills

## Financial Data

Organizations covered in the report: AGC Inc. and its consolidated subsidiaries  
Reporting period: January 1 to December 31

	2014	2015	2016	2017	2018	2019	2020	2021	(Millions of yen) 2022
<b>Business Results</b>									
Net sales	¥1,348,308	¥1,326,293	¥1,282,570	¥1,463,532	¥1,522,904	¥1,518,039	¥1,412,306	¥1,697,383	¥2,035,874
Operating profit	62,131	71,172	96,292	119,646	120,555	101,624	75,780	206,168	183,942
Profit before taxes	41,163	84,522	67,563	114,424	128,404	76,213	57,121	210,045	58,512
Recurring profit	20,475	46,287	53,362	79,297	101,991	55,515	41,164	159,062	22,505
Profit (loss) for the year attributable to owners of the parent	15,913	42,906	47,438	69,225	89,593	44,434	32,715	123,840	(3,152)
Depreciation	137,200	137,381	121,803	128,226	121,668	143,361	143,716	166,756	185,656
CAPEX	118,170	125,103	126,025	165,095	230,598	207,661	241,348	216,503	236,553
Research and development expenses	44,758	38,927	39,212	43,912	45,755	47,450	46,444	49,444	52,252
Cash flows from operating activities	135,790	187,170	203,637	203,504	189,287	191,906	225,392	326,713	217,146
Cash flows from investing activities	(108,754)	(115,951)	(113,596)	(209,560)	(194,450)	(182,636)	(230,248)	(123,787)	(145,312)
Free cash flow	27,035	71,218	90,041	(6,055)	(5,162)	9,269	(4,855)	202,926	71,834
<b>Major Investment Indicators</b>									
Market value	¥ 680,791	¥ 804,604	¥ 920,461	¥1,102,752	¥ 758,663	¥ 869,552	¥ 796,764	¥1,216,595	¥974,298
Return on equity attributable to owners of the parent* <sup>1</sup>	1.4%	3.9%	4.3%	6.1%	7.7%	3.9%	2.9%	10.2%	—
Return on assets* <sup>2</sup>	3.0%	3.5%	4.8%	5.7%	5.4%	4.4%	3.1%	7.9%	6.7%
Price / earnings ratio (PER) (times)	42.77	18.75	19.40	16.15	8.59	19.57	24.35	9.82	(309.07)
Price / book value ratio (PBR) (times)	0.61	0.74	0.84	0.93	0.67	0.75	0.71	0.93	0.70
Return on invested capital (ROIC)* <sup>3</sup>	0.9%	2.6%	2.9%	4.1%	5.0%	2.4%	1.6%	5.9%	(0.1%)
EBITDA* <sup>4</sup>	185,905	228,381	195,767	249,880	259,425	231,857	208,459	383,226	253,209
Earnings (loss) per share* <sup>5</sup> (yen)	67.90	184.85	204.25	300.65	397.58	199.95	147.24	557.10	(14.22)
Cash dividends per share* <sup>5</sup> (yen)	90.00	90.00	90.00	105.00	115.00	120.00	120.00	210.00	210.00
Consolidated dividend payment ratio	130.7%	48.5%	43.9%	34.8%	28.8%	59.7%	81.2%	37.6%	—

	2014	2015	2016	2017	2018	2019	2020	2021	(Millions of yen) 2022
<b>Asset and Efficiency Indicators</b>									
Total assets	¥2,077,338	¥1,991,262	¥1,981,451	¥2,228,560	¥2,235,776	¥2,335,415	¥2,534,458	¥2,666,031	¥2,814,029
Property, plant and equipment	1,066,193	982,296	937,869	1,060,601	1,108,934	1,177,691	1,246,885	1,323,868	1,350,769
Inventories	239,497	235,374	227,284	261,708	277,014	291,224	274,835	330,101	436,516
Trade receivables	262,091	241,294	241,476	260,497	260,111	264,102	266,177	295,161	315,808
Total asset turnover* <sup>6</sup> (times)	0.64	0.65	0.65	0.70	0.68	0.66	0.58	0.65	0.74
Fixed asset turnover* <sup>7</sup> (times)	1.27	1.29	1.34	1.46	1.40	1.33	1.16	1.32	1.52
Inventory turnover* <sup>8</sup> (months)	2.8	2.9	3.0	2.8	2.9	3.1	3.2	3.1	3.1
Receivables turnover* <sup>9</sup> (months)	2.3	2.3	2.3	2.1	2.1	2.1	2.3	2.0	1.8
<b>Indicators of Stability</b>									
Shareholders' equity* <sup>10</sup>	¥1,113,126	¥1,094,172	¥1,095,438	¥1,184,034	¥1,137,204	¥1,157,097	¥1,115,142	¥1,314,161	¥1,390,254
Shareholders' equity ratio	53.6%	54.9%	55.3%	53.1%	50.9%	49.5%	44.0%	49.3%	49.4%
Debt-to-equity ratio* <sup>11</sup> (times)	0.42	0.40	0.37	0.38	0.43	0.47	0.63	0.41	0.41

\*1 Return on equity = Profit (loss) for the year attributable to owners of the parent / Equity attributable to owners of the parent

\*2 Return on assets = Operating profit / Total assets

\*3 Return on invested capital = Profit (loss) for the year attributable to owners of the parent / Average invested capital\* \* Invested capital = Total equity + Interest-bearing debt

\*4 Earnings before interest, tax, depreciation, and amortization (EBITDA) = Profit before taxes + Depreciation + Interest expenses

\*5 The Company consolidated its common shares at a ratio of 5 shares to 1 share on July 1, 2017. Accordingly, per-share data is calculated on the assumption that the consolidation of shares was conducted at the beginning of 2007.

\*6 Total asset turnover = Net sales / Total assets

\*7 Tangible fixed asset turnover = Net sales / Tangible fixed assets (Property, plant and equipment)

\*8 Inventory turnover = Inventories / (Cost of sales / 12)

\*9 Receivables turnover = Trade notes and accounts receivable (Trade receivables) / (Net sales / 12)

\*10 Shareholders' equity = Net assets – Treasury shares – Minority interests

\*11 Debt-to-equity ratio = Interest-bearing debt / Net assets (equity)

## External Evaluations

The major socially responsible investment (SRI)- and environmental, social, and governance (ESG)-related indices for which the AGC Group has been selected, as well as the main external recognition of the Group's ESG activities, are as follows.

### Inclusion in SRI and ESG Investment Indices

AGC has been selected for the FTSE4Good Index Series, an SRI index created by FTSE Russell (headquartered in the United Kingdom); for the FTSE Blossom Japan Index, an integrated ESG index that acknowledges the excellent performance of Japanese companies in ESG activities, also created by FTSE Russell; and for the newly created FTSE Blossom Japan Sector Relative Index.\*1



The Climate Disclosure Project (CDP), which scores the environmental initiatives of companies and local governments and discloses this information to investors, certified AGC as an "A List company" in the climate change area in 2022. In addition, AGC was selected as a Supplier Engagement Leader, the highest Supplier Engagement Rating available from the CDP.



AGC has received WB2°C\*2 certification from the Science Based Targets initiative (SBTi), which encourages companies to set GHG emissions reduction targets based on scientific evidence and also examines and certifies these targets.



### External Recognition of AGC's ESG Activities

Certain AGC bases have received the highest rankings in sustainability assessments conducted by EcoVadis (headquartered in France).

Platinum rating: Kashima Plant and AGC Pharma Chemicals Europe, S.L.U.  
In addition to the above, high ratings have been received by multiple domestic and overseas bases.



AGC was recognized as a "White 500" company for the fourth consecutive year under the 2023 Certified Health & Productivity Management Outstanding Organizations Recognition Program, organized by the Ministry of Economy, Trade and Industry (METI) and Nippon Kenko Kaigi, in recognition of its efforts to strategically implement health management for employees. In addition, AGC Display Glass Yonezawa Co., Ltd., was recognized under the same program for a third straight year in 2023.



AGC has been included as one of the Innovation Momentum 2023: The Global Top 100 innovators. LexisNexis Intellectual Property Solutions compiles this list by selecting 100 companies that are developing groundbreaking solutions for current social issues and building intellectual property foundations for further breakthroughs.

AGC was one of 33 companies selected by METI and the Tokyo Stock Exchange as a Digital Transformation (DX) Stock 2022, which recognizes an achievement of outstanding utilization of digital technologies and establishment of internal systems for the promotion of DX that helps enhance corporate value.



In 2023, AGC was selected for the eighth time and the sixth consecutive year among the Clarivate™ Top 100 Global Innovators™ for 2023, as determined by Clarivate Plc (headquartered in the United Kingdom). This global information services company analyzes intellectual property trends based on its own patent data to select the 100 most innovative companies and research institutions in the world.



AGC received four stars in the Sixth Nikkei Smart Work Management Survey, organized by Nikkei Inc. to highlight advanced companies aiming to drastically improve productivity through workstyle reforms.



AGC was awarded an overall QualityScore of 1, the highest possible rating, with scores of (1)\*3 for Board of Directors' composition, (2) for shareholder rights, (1) for executive compensation, and (1) for auditing and risk management in the 2023 governance assessment conducted by Institutional Shareholder Services (ISS), an advisory company for exercising voting rights.

\*1 The FTSE Blossom Japan Sector Relative Index was designed to measure the performance of Japanese companies with excellent track records in ESG activities relative to their sectors. For companies that emit large amounts of GHG, in order to facilitate the transition to a low-carbon economy, the index uses Transition Pathway Initiative management quality scores to screen for such companies that are undertaking initiatives to reduce their emissions.

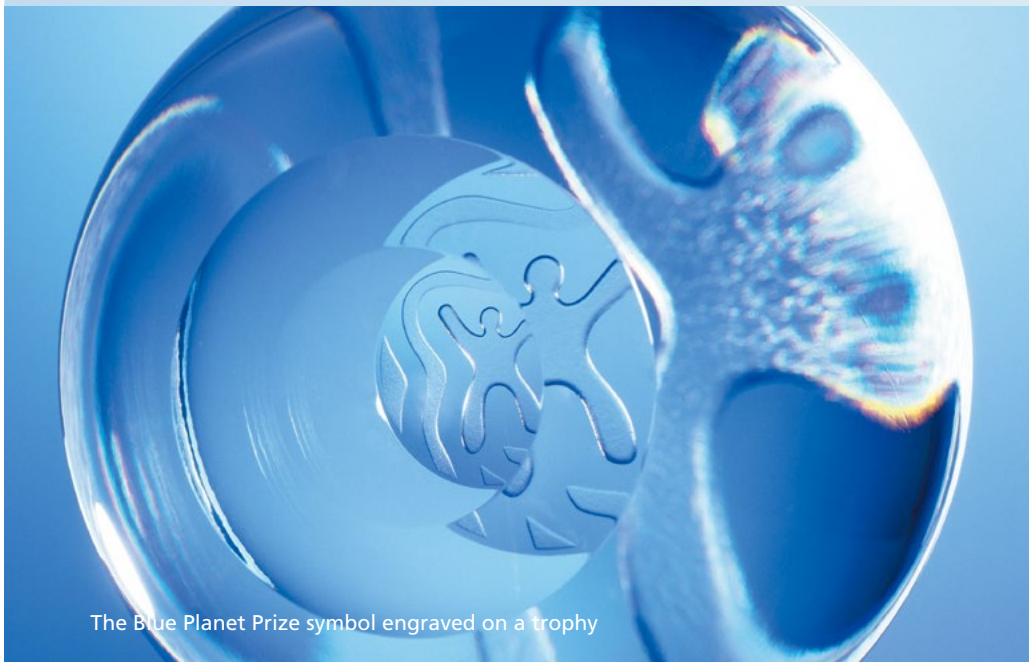
\*2 Well below 2°C

\*3 Figures in parentheses are scores ranging from 1 to 10, with lower scores indicating lower governance risk.

## The Asahi Glass Foundation

Creating a Truly Rich Society by  
Supporting Trailblazing Research and Fostering Talent

**af** THE ASAHI GLASS FOUNDATION



The Blue Planet Prize symbol engraved on a trophy

The Asahi Glass Foundation traces its origins to the Asahi Foundation for Chemical Industry Promotion, which was established in 1933 to commemorate the 25th anniversary of the founding of Asahi Glass Co., Ltd. (now AGC Inc.). In 1990, the foundation was renamed the Asahi Glass Foundation. In 2018, it assumed its current form through a merger with the Asahi Glass Scholarship Foundation. The Asahi Glass Foundation is committed to enriching society through various activities, including providing grants for cutting-edge research, granting scholarships to future leaders, and recognizing individuals and organizations that have made significant contributions toward solving global environmental problems.

### Main Activities of the Asahi Glass Foundation

Since 2018, the foundation has focused on three key activities: the Commendation Program, the Research Grant Program, and the Scholarship Program.

#### Commendation Program

- Presenting the “Blue Planet Prize,” an international environmental award.
- Conducting the Questionnaire on Environmental Problems and the Survival of Humankind as well as reporting the time on the “Environmental Doomsday Clock.”
- Conducting the Survey on the Awareness of Environmental Issues among the General Public.



Contributing toward the resolution of global environmental problems

#### Research Grant Program

- Supporting original research in the natural sciences, humanities, and social sciences that has the potential to benefit society in future generations by giving grants to universities in Japan, Thailand, Indonesia, and Vietnam.

Provision of approx. **¥11.9 billion**,  
covering **5,720** grants



Seeking to build the foundations for a next-generation society

#### Scholarship Program

- Fostering exceptional future leaders by providing scholarships to Japanese and international students enrolled in graduate schools in Japan.

Provision of approx. **¥3.5 billion**,  
covering **4,363** scholarships



Fostering future leaders throughout society

## The Blue Planet Prize

The Blue Planet Prize is awarded to individuals and organizations in recognition of outstanding contributions towards solving global environmental problems. As a general rule, two recipients are selected each year, and the announcement of the awardees takes place in June. In the fall, the laureates are invited to give commemorative lectures in Tokyo and Kyoto. Each recipient receives a certificate of merit, a commemorative trophy, and 500,000 USD in prize money.

The award's name was inspired by the remark "the Earth is blue," uttered by the first human in space, Russian cosmonaut Yuri Gagarin, upon viewing our planet. The Blue Planet Prize was so named in the hope that our blue planet will be a shared asset capable of sustaining human life far into the future.



### Establishment of the Pioneering International Environmental Prize

Environmental conservation is one of the most pressing global issues humankind faces. In 1992, the year of the Earth Summit, the Asahi Glass Foundation established the Blue Planet Prize, an international environmental award, in the hope of restoring the global environment.

### Together with the Younger Generation

In August 2022, to commemorate the 30th anniversary of the establishment of the Blue Planet Prize, the anniversary symposium took place in Tokyo. Three former laureates who attended the symposium issued a joint statement regarding environmental issues. Building on online discussions with these former laureates, a group of young Japanese people developed a set of proposals called "Young Environmental Advocacy."

### Former laureates (one of each year's two laureates)



**Dr. Syukuro Manabe**  
(USA)



**M.S. Swaminathan.  
Research Foundation**  
(India)



**Prof. Hirofumi Uzawa**  
(Japan)



**Prof. Malin Falkenmark**  
(Sweden)



**Prof. Jared Diamond**  
(USA)



**Prof. Stephen Carpenter**  
(USA)

#### 1992 1st Award

Dr. Manabe pioneered research for predicting climate change by using numerical models and by quantifying the effects of carbon dioxide and other greenhouse gases. **He was awarded the Nobel Prize in Physics in 2021.**

#### 1996 5th Award

The Foundation led the way toward the realization of sustainable agriculture and rural development through research into soil improvement, genetic engineering of plant species, and the application of these findings.

#### 2009 18th Award

Prof. Uzawa developed a theoretical framework for confronting environmental issues such as global warming, advocating the concept of Social Common Capital, which contributed to pioneering and highly original achievements.

#### 2018 27th Award

Prof. Falkenmark placed water problems onto the global agenda. Seeing water as the bloodstream of the biosphere, Prof. Falkenmark's ideas and activities have had an enormous impact in solving environmental problems.

#### 2019 28th Award

Prof. Diamond regards environmental problems as fundamental to any study of human history and has influenced many people regardless of age or nationality to consider the next steps for civilization.

#### 2022 31st Award

Prof. Carpenter studied the resilience of lakes, providing a new perspective on social-ecological systems. From a broad geochemical viewpoint, he highlighted environmental pollution from phosphorus, attributable to land use.

For more information on past laureates, please visit our website at

<https://www.af-info.or.jp/en/blueplanet/list.html>



## Corporate and Stock Information (As of December 31, 2022)

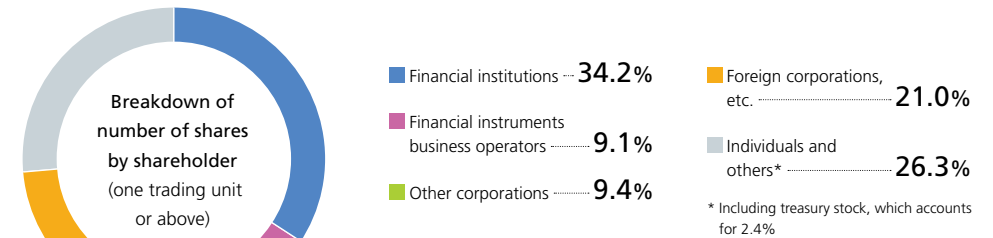
### Corporate Information

Head office	1-5-1, Marunouchi, Chiyoda-ku, Tokyo 100-8405, Japan
Company name	AGC Inc.
English company name	AGC Inc.
Founded	September 8, 1907
Incorporated	June 1, 1950
Representative	Yoshinori Hirai, Representative Director, President & CEO
Capital	¥90,873 million
Number of consolidated subsidiaries	201 (including 164 overseas)

### Stock Information

Stock listing	Tokyo Stock Exchange
Industry	Glass and ceramic products
Securities code	5201
Trading unit	100
Fiscal year	January 1 to December 31
Ordinary General Meeting of Shareholders	March
Stock authorized	400,000,000 shares
Stock issued	227,441,381 shares
Total number of shareholders	120,086

### Stock Information



### Major Shareholders

	Number of shares held (Thousand shares)	Shareholding ratio (%)
The Master Trust Bank of Japan, Ltd. (Trust Account)	31,696	14.27
Custody Bank of Japan, Ltd. (Trust Account)	16,583	7.47
Meiji Yasuda Life Insurance Company (Standing Proxy: Custody Bank of Japan, Ltd.)	7,692	3.46
The Asahi Glass Foundation	6,219	2.80
Barclays Securities Japan Limited BNYM (Standing Proxy: MUFG Bank, Ltd.)	6,000	2.70
JPMorgan Securities Japan Co., Ltd.	4,791	2.16
Asahi Glass Business Partner Shareholding Association	4,536	2.04
Japan Securities Finance Co., Ltd.	3,974	1.79
SMBC Nikko Securities, Inc.	3,889	1.75
Nippon Life Insurance Company (Standing Proxy: The Master Trust Bank of Japan, Ltd.)	3,662	1.65

#### Notes

- In addition to the above, AGC Inc. holds treasury stock of 5,383,924 shares.
- The shareholding ratio is calculated excluding treasury stock.