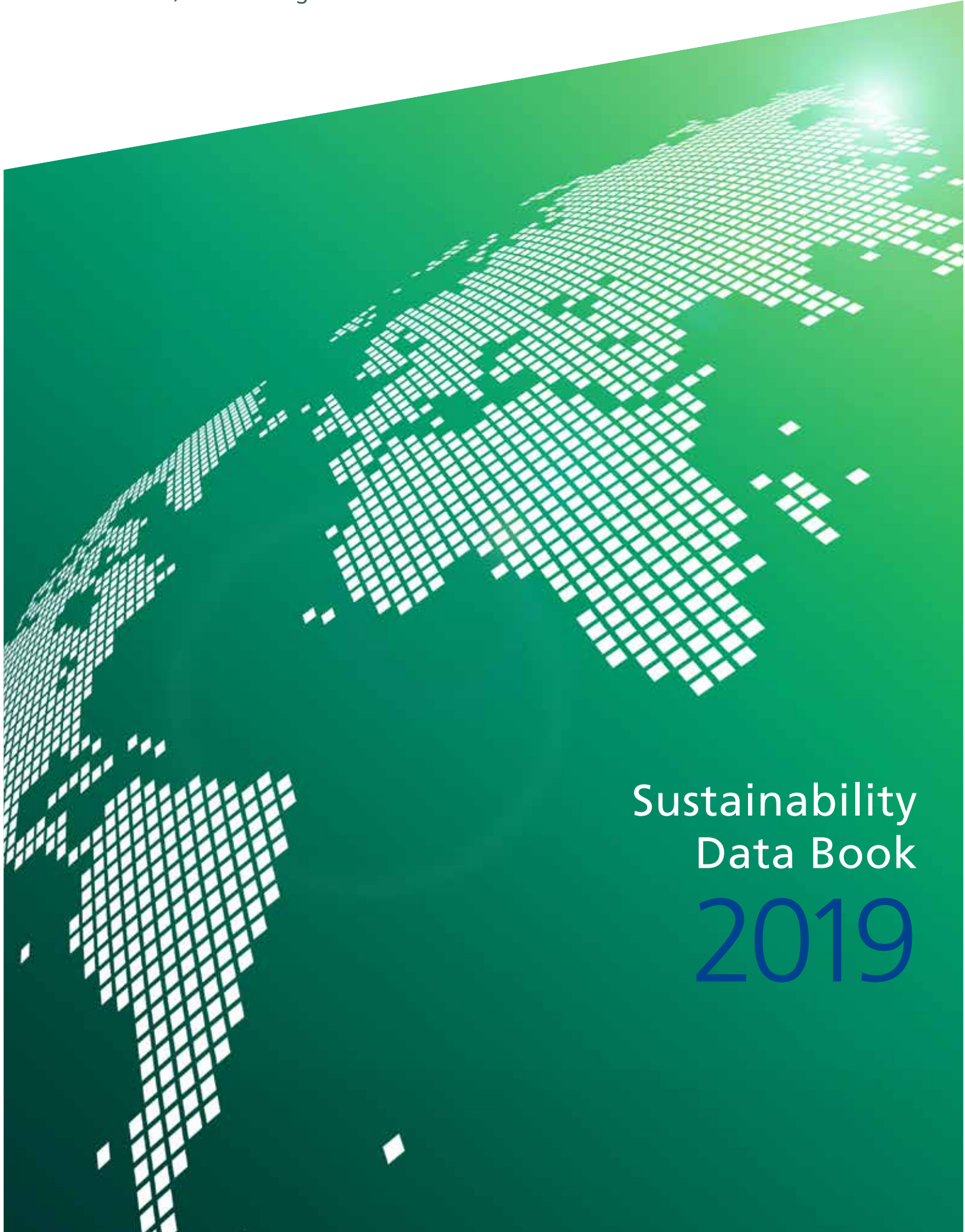




Your Dreams, Our Challenge



Sustainability  
Data Book  
2019

## Editing Policy Contents

This Sustainability Data Book contains non-financial aspects (sustainability reporting) and complements the AGC Report 2019, in which the AGC Group publishes its broad range of business strategies and business activities. The information herein is based on the Core option of the GRI (Global Reporting Initiative) and GRI standards.

Beginning in 2019, the report's title has been changed from CSR Activity Report (Detailed) to Sustainability Data Book. In addition to non-financial data, individual policies, promotional structures, activity goals and achievements are reported in regard to the Group's CSR activities. Initiatives in the countries and regions AGC is active in are introduced on the AGC Group's CSR website. The Sustainability Data Book should be viewed alongside the CSR website to foster a deeper understanding of the social responsibility activities implemented by the AGC Group.

## Scope of This Report

- **Reporting Period**  
2018 (Jan.–Dec. 2018)  
Some information includes content from 2017 and/or 2019
- **Organizations Covered in the Report**  
AGC and its 213 consolidated subsidiaries  
(Group companies world wide)
- **Primary Notation and Report Targets Used in the Report**
  - **The AGC Group**  
Same as “Organizations Covered in the Report” mentioned above.
  - **The AGC Group (Japan)**  
Group companies in Japan including AGC
  - **AGC/the Company**  
AGC Inc. (on an unconsolidated basis)
  - **Asia/Group companies in Asia**  
Group companies in Asia excluding the AGC Group (Japan)

## Dates of Publication

Japanese version: July 2019 (Last date of publication: June 2018)  
English version: August 2019 (Last date of publication: July 2018)

In December 2019, information was added to page 66: “Reduction of Leakage of Fluorocarbons from Commercial Air Conditioners and Refrigerators.”

## Regarding Future Assumption, Forecasts and Plans

Future perspectives described in the Sustainability Data Book 2019 are based on the latest information available to the AGC Group at the time of editing this report. Nevertheless, please note that results and consequences may vary with fluctuations in the business environment.

Company name was changed to AGC Inc. on July 1, 2018

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## Message from the President



The AGC Group Vision, **“Look Beyond”**, includes a section entitled Our Mission, which is shared by all 50,000 members of the AGC Group in about 30 countries and regions worldwide. It states, “AGC, an everyday essential part of our world—AGC’s unique materials and solutions make people’s lives better around the world every day.” The vision also includes a section entitled Our Shared Values, comprised of “Innovation & Operational Excellence,” “Diversity,” “Environment” and “Integrity.” These values provide standards for the actions of every member of the Group.

The Sustainability Data Book 2019 showcases the AGC Group’s interaction with its stakeholders and the Group’s fundamental policy towards its CSR activities, and the initiatives therein.

[Click here to watch a video about the AGC Plus management policy \(about two and a half minutes in length\)](#)

For more than 110 years, the AGC Group has been contributing to people’s livelihoods and industrial development. Guided by the AGC Group Vision, we will continue to provide new materials and solutions that meet the changing needs of each era, aiming to be an essential part of the world. At the same time, we remain strongly committed to the sustainable development of countries worldwide with the hope of ensuring a bright future for our planet.

On behalf of management, I would like to express our appreciation for the understanding and support of all the Group’s stakeholders.

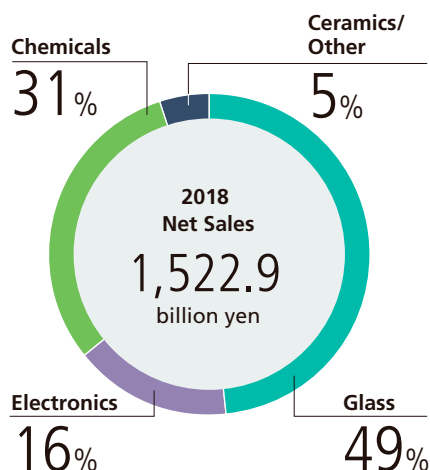
# Overview of the AGC Group

## Business Overview<sup>1</sup>

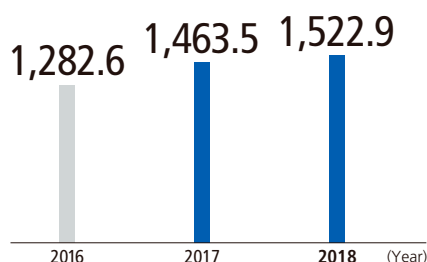
The AGC Group's business extends into four fields: glass, electronics, chemicals and ceramics. Through world-leading technologies and expertise the Group has developed over a century of technological innovation, it provides a diverse lineup of products for customers across a wide range of industries. From architectural glass and automotive glass and extending to display glass and electronic materials—as well as high-function materials such as chemicals and ceramics—the AGC Group proposes new solutions from its unique manufacturing perspective.

In order to further enrich society, the AGC Group is constantly pushing the limits in the creation of new standards of value.

### ● Sales Ratio<sup>2</sup>

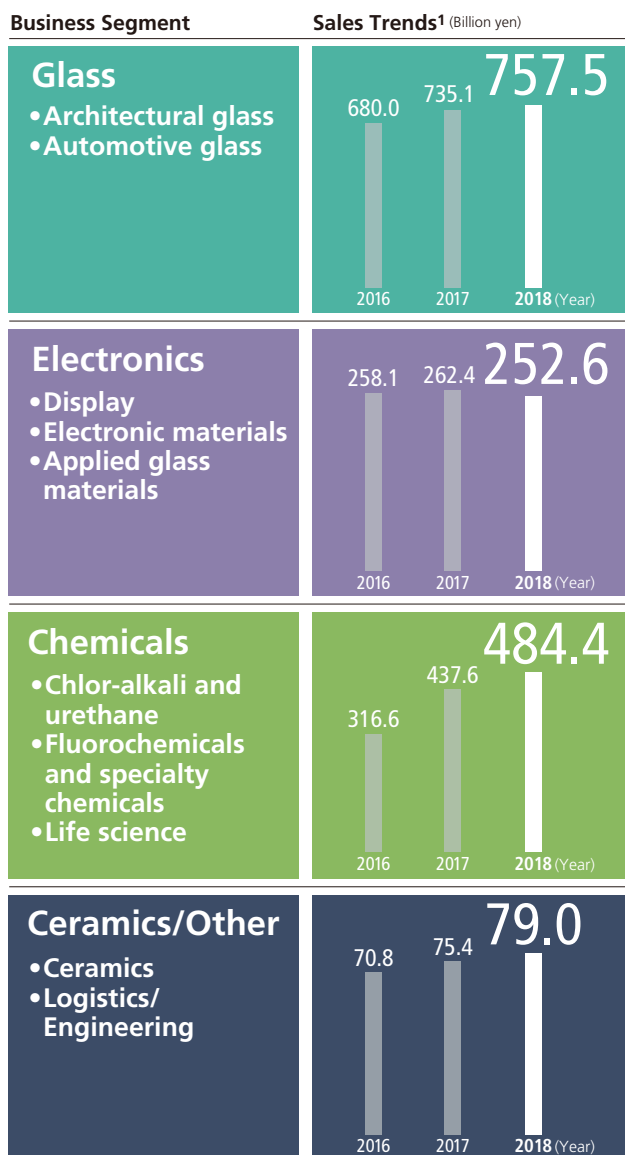


### ● Sales Trends (Billion yen)



<sup>1</sup> Numeric data is based on International Financial Reporting Standards (IFRS). (Subject organizations: AGC, Inc. and its consolidated subsidiaries / Target period: Each business year ending December 31)  
<sup>2</sup> Sales Ratio calculated from sales to external customers.

### ● Business Segment (As of the end of December 2018)



<sup>1</sup> Sales by business were calculated before elimination, therefore the sum will not match company-wide sales when totaled.

## Corporate Data (As of the end of December 2018)

<b>Company Name</b>	AGC Inc.	<b>Capital</b>	90,873 million yen
<b>Head Office</b>	1-5-1, Marunouchi, Chiyoda-ku, Tokyo 100-8405 JAPAN	<b>Outstanding Stock</b>	227,441,381 shares
<b>Founded</b>	September 8, 1907	<b>Employees</b>	54,101 (consolidated), 6,659 (non-consolidated)
<b>Incorporated</b>	June 1, 1950	<b>Consolidated Group Companies</b>	213 (176 overseas)

## Global Network

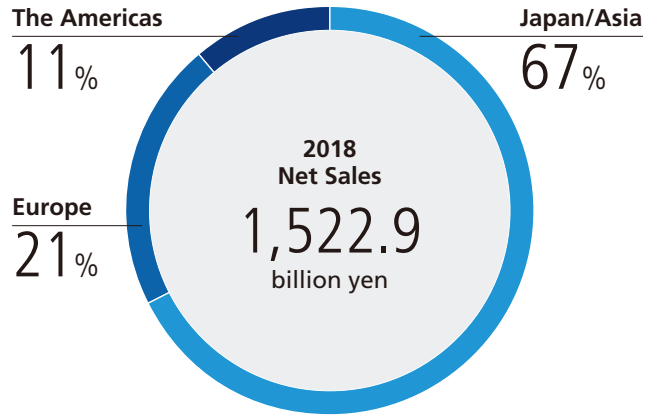
The AGC Group's business has extended into over 30 countries and regions. In its glass business, which has markets around the world, the Group has product development and manufacturing bases in the three regions of Japan/Asia, Europe and the Americas. In its electronics business, as its client businesses are concentrated in East Asia, development and manufacturing bases are concentrated in Japan and other Asian countries.

In the chemicals business, the Group has been working on expanding its manufacturing bases with a focus on Southeast Asia, where infrastructure development is progressing.

Utilizing this global network, the AGC Group strives to expand businesses and grow even deeper roots in local communities, while exploring opportunities to develop new business areas.

### ● Sales Ratio<sup>1</sup>

(As of the end of December 2018)



<sup>1</sup> Sales Ratio calculated from sales to external customers.

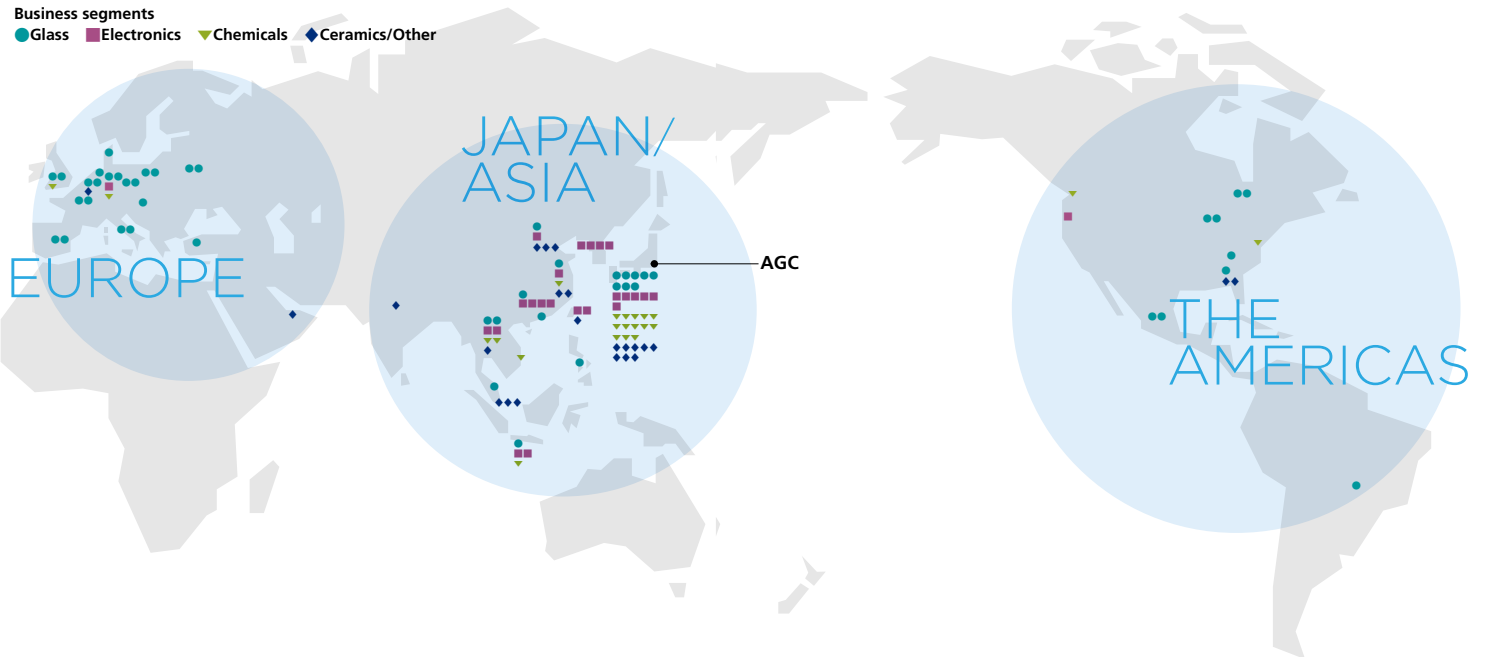
Europe  
Employees Approximately  
17,132

Japan/Asia  
Employees Approximately  
31,949

The Americas  
Employees Approximately  
5,020

#### Business segments

● Glass   ■ Electronics   ▼ Chemicals   ◆ Ceramics/Other





## CSR and Related Policies

### Fundamental Approach

In order to fulfill the tenets of “Our Mission,” “Our Shared Values” and “Our Spirit” as outlined in the Group Vision **“Look Beyond”**, the AGC Group endeavors to foster trust, meet the expectations of the community, and contribute to the creation of a sustainable society.

The Group uses ISO 26000, an international standard on social responsibility, as a guideline for its global CSR activities. Moreover, in line with the AGC Group Charter of Corporate Behavior (see page 7), the Group takes voluntary action for social responsibility with the aim of gaining society’s trust and growing and developing as a company.

### The AGC Group Vision Overview

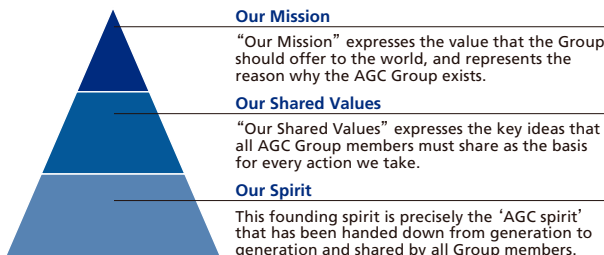
#### The AGC Group Vision

# “Look Beyond”

**“Look Beyond”** is the AGC Group’s corporate philosophy on which all the activities of the Group are founded.

#### “Look Beyond”

Structure and elements of **“Look Beyond”**



#### 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 trusted 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

- We will continuously seek innovations in the technology, products and services we provide by thinking beyond conventional ideas and frameworks.
- We will continuously create new value which satisfies the needs of our potential and future customers by thinking from the customer’s perspective and accurately forecasting the changes in society and markets.
- We will continuously improve our operations for maximum efficiency and quality in every activity and will strive for the highest possible standard of performance.

##### Diversity

- We will respect individuals with different capabilities and personalities, and our global management will operate without regard to nationality, gender or background.
- We will respect cultural diversity regardless of race, ethnicity, religion, language, and nationality.
- We will respect different perspectives and opinions at all times.

##### Environment

- We, as good global citizens, will contribute to the creation of a sustainable society in harmony with nature.
- 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 strictly comply with applicable laws and regulations.
- We will fulfill our responsibilities in relation to all the products and services we provide to achieve customer satisfaction and trust.

#### Our Spirit

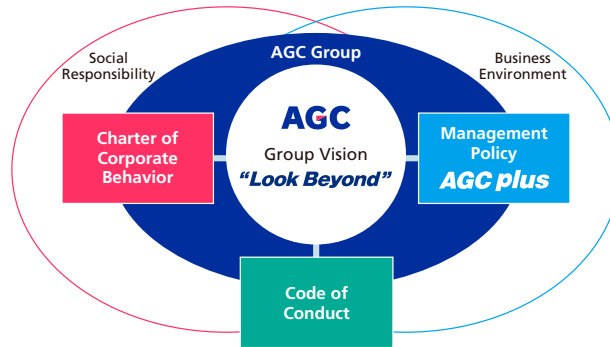
**“Never take the easy way out, but confront difficulties.”**

- The founding spirit of Toshiya Iwasaki, who established Asahi Glass Company in 1907.

## AGC Group Vision **“Look Beyond”**

### AGC Group Charter of Corporate Behavior

The Group Charter sets forth and declares the perspectives that form the basis of our behavior to ensure that the AGC Group will remain a good corporate citizen.



### Management Policy **AGC plus**

The Management Policy sets the course of action for all the Group’s business activities providing social and business aspirations, guidelines and directives. It is revised as necessary to reflect changes in the business environment and circumstances of the Group.

### AGC Group Code of Conduct

The Code of Conduct sets forth standards to be observed by all Group members from the perspective of “integrity” in Our Shared Values under the AGC Group Vision **“Look Beyond”**.

### AGC Group Brand Statement

At the AGC Group, the brand statement of “Your Dreams, Our Challenge” is a central communication link between AGC and the world. The statement entails that we will continue to provide products that benefit peoples’ daily lives, and contribute to society’s development through the creation of new value.

#### “Your Dreams, Our Challenge”

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

For more than a century, AGC has been guided by these founding spirits. Our unique materials, solutions and reliable partnerships have facilitated leading innovations across diverse industries and markets.

Today, by working with others to combine knowledge and advanced technology, we help make ever greater achievements possible, and bring bolder ideas to life.

**Your Dreams, Our Challenge**

## AGC Group Charter of Corporate Behavior (Established on June 1, 2007 and revised on March 9, 2016)

Under the tenet of “Our Mission” in the Group vision, **“Look Beyond”** the AGC Group strives to be a company trusted by all of its stakeholders, a company that meets the expectations of the world business community to grow and develop responsibly and a company that significantly contributes to a healthier global society. To this end, the Group has established the AGC Group Charter of Corporate Behavior and acts in line with the following principles.

### Integrity: Sincere Behavior

1. The AGC Group will develop and provide useful goods and services of superior quality, giving due consideration to safety and the environment, and will strive for customer satisfaction and loyalty.
2. The AGC Group will understand and comply with applicable laws and regulations of the countries and regions in which it does business and will respect international norms of behavior.
3. The AGC Group will promote fair trade and conduct its operations in accordance with the principle of fair competition and all applicable laws and regulations.
4. The AGC Group will maintain sound relationships with government agencies and other responsible organizations. The Group will not support any person or group that threatens the order and security of society.
5. The AGC Group will properly manage and safeguard its own proprietary information, intellectual property, and other assets and will respect the property rights and interests of others including customers and business partners.

### Environment and Safety: With Due Consideration

6. The AGC Group regards environmental conservation as an essential responsibility of global citizens and will proactively contribute to the development of a sustainable society.
7. The AGC Group will pursue technological innovations and new product developments that reflect due consideration for the environment and will participate in activities to preserve the environment and safety and security at work.
8. The AGC Group will maintain its workplaces with a proper regard to occupational health and safety for the people related to its business activities.

### Diversity: Respect for People

9. The AGC Group will respect human rights and will operate its business with due regard for the cultures and customs of each country and region in the world.
10. The AGC Group will respect people's diverse capabilities and personal dignity and will create fair and open environments at its workplaces without discrimination based on race, ethnicity, religion, nationality, gender, disability, or any other legally protected group.
11. The AGC Group will not engage in forced labor or child labor and will not tolerate infringements of human rights.

### Harmony with Society: From “Responsibility” to “Reliability”

12. The AGC Group will strive to be a trusted corporate citizen, fulfilling its responsibilities to the communities in which it does business.
13. The AGC Group will build productive and proper relationships with business partners and encourage them to adhere to business principles consistent with its own.
14. The AGC Group will communicate responsibly with customers, local citizens, shareholders, employees, and other members of society by gathering their opinions and disclosing information in a fair and appropriate manner.

The managements of all AGC Group companies, recognizing that it is their responsibility to realize the spirit of this Charter, will take the initiative to achieve an understanding of the Charter within all Group companies, and at the same time, will seek its business partners' cooperation.

The managements will also promote the development and implementation of systems that the principles stipulated in this Charter can be duly incorporated into the Group's decision making and implementation.

In the case of any behavior contrary to the principles of this Charter, we will work to identify the cause and prevent a recurrence, making it clear to those inside and outside Group companies that the situation is being addressed diligently. We will take appropriate corrective and disciplinary actions when necessary.



## CSR Promotion System

### Management Structure

The AGC Group established a CSR Committee in 2005 to promote CSR. The AGC Group CEO presides as the CSR Committee chair, and heads of each business and corporate division deliberate over general policies and issues related to the Group's CSR activities four times annually. The results of deliberations by the CSR Committee are shared globally across the AGC Group through subcommittees specializing in compliance and EHSQ<sup>1</sup> management. These results are then reflected in measures implemented by the Group's in-house Companies and SBUs<sup>2</sup>.

- 1 Environment, Occupational Health & Safety and Quality
- 2 Strategic Business Unit

#### Activities for Raising Awareness of the Group Vision

The AGC Group disseminates the Group Vision **"Look Beyond"**. Through in-house education, in-plant posters, vision books, the group news portal "We are AGC!" (see page 13) and other channels, the Group shares the Group Vision with domestic and overseas Group members and companies that have newly joined the AGC Group.

Also, through the regularly conducted employee awareness survey (see page 28), the Group confirms the degree of employee awareness and comprehension regarding the Group Vision.

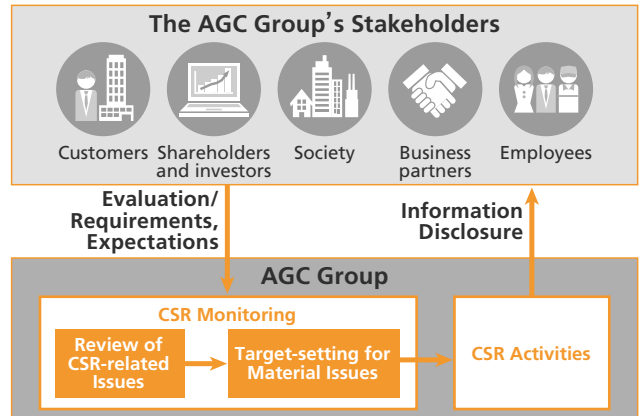
#### CSR Material Issues and the PDCA Cycle

In 2011, the AGC Group began to establish CSR material issues in line with ISO 26000 and create policies based on these issues and their importance to society. The Group also sets targets and performance levels to be achieved through the PDCA cycle. The content of the Group's CSR activities in this area is published on the CSR website page and disclosed to the Group's shareholders.

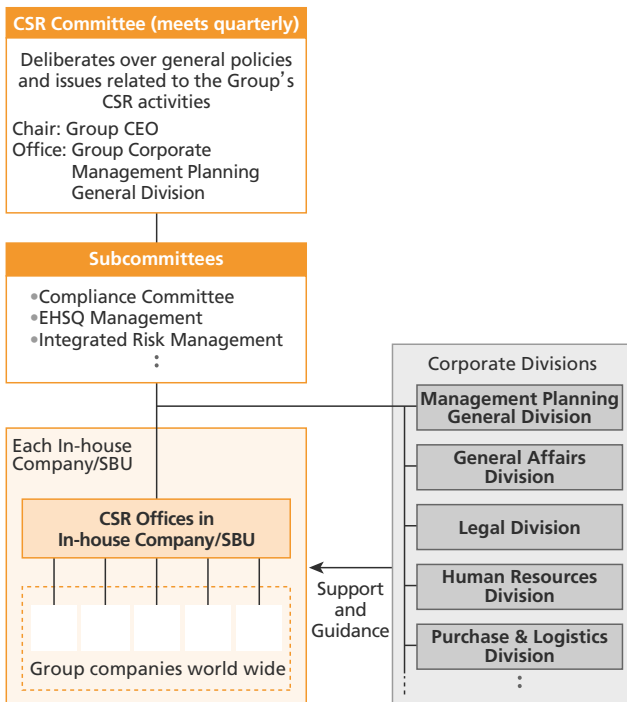
#### ISO26000 and CSR Material Issues for the AGC Group

ISO 26000 Items		AGC Group's CSR material issues
Core subjects	Issues	
Organizational Governance	Decision-making processes and structures	Organizational governance
Human Rights and Labor Practices	Conditions of work and social protection	Fair working conditions
	Health and safety at work	Occupational health & safety
	Human development and training in the workplace	Human resource development
The Environment	Prevention of pollution	Pollution prevention
	Sustainable resource use	Sustainable use of resources
	Climate change mitigation and adaptation	Climate change initiatives
Fair Operating Practices	Anti-corruption	Anti-corruption
	Fair competition	Compliance with antitrust laws
	Promoting social responsibility in the value chain	Social responsibility in the supply chain
Consumer Issues	Protecting consumers' health and safety	Product safety

#### The CSR PDCA Cycle



#### CSR Promotion System



### Group-wide Initiatives

#### EHSQ Management System Operation

It is necessary to promote management of Environment, Occupational Health & Safety and Quality (EHSQ) related issues as an integral part of business. To that end, the AGC Group tailors EHSQ management to respond to customer requests and to fit the business format of each business division.

Furthermore, for integrated management of EHSQ activities from the perspective of the entire Group, the EHSQ management system was established based on their common initiatives, and commenced in 2013.

The AGC Group EHSQ Management Regulations clearly state the roles of the Group CEO, the EHSQ Managers and division heads within the EHSQ management system. Also, Group initiatives are set in accordance with the system, the CEO regularly reviews progress and activities and the PDCA (Plan, Do, Check, Act) cycle is implemented repeatedly.

## Stakeholders

### Fundamental Approach

The corporate behavior of the AGC Group is based in its relations, not only with customers, but with all stakeholders, including shareholders, investors, business partners, governments, NPOs/NGOs, local communities, and employees and their families.

Accordingly, the AGC Group Charter of Corporate Behavior states that the Group will seek to communicate with all its stakeholders, including customers, local communities, shareholders and employees. The Group listens to their opinions and discloses corporate information promptly and fairly.

#### ● AGC Group Communication with Stakeholders

##### Customers

- Information dissemination with press releases
- Exhibition booths at trade shows
- AGC studio showroom



Milan Design Week

##### Shareholders and Investors

- Regular stockholders' meetings
- Financial settlement briefings
- Information sessions for investors
- Facility tours
- Publishing AGC Financial Review, etc.



Earnings presentation (Japan)

##### Employees and their Families

- The Group's in-house magazine, We are AGC!
- Information over the Intranet
- Opportunities to exchange views directly with the CEO
- Employee awareness surveys
- Help lines • Labor-management talks, etc.



The Group's in-house magazine, We are AGC!



### Management Structure

The AGC Group has established a support department for each stakeholder group and cooperates with relevant departments to proactively disclose corporate information in a prompt and proper manner. The Group also creates opportunities to act on the opinions of its stakeholders for business management, promoting two-way communication between stakeholders and the AGC Group.

##### Local Communities

- Plant tours, job training
- Employee participation in local events
- Social contribution activities Etc.



Social Welfare Activities (Brazil)

##### NPOs/NGOs

- Periodic opinion exchanges
- Cooperation on individual projects Etc.



Site dialogue (Thailand)

##### Business Partners

- Satisfaction surveys
- Social gatherings
- Dialogue through the AGC Supplier's Association, etc.



Meeting with business partners (Japan)

##### Governments

- Dialogue through economic organizations and industry associations
- Dialogue and cooperation with local governments
- Social contribution activities, etc.



Receiving the CSR-DIW Contribution Award (Thailand)

## Group-wide Initiatives

### Formulation of Group Communication Guidelines

The AGC Group has established Group Communication Guidelines to accurately disseminate Group information. Adhering to guidelines of the public relations divisions of Group companies in Japan, the rest of Asia, Europe and North America, the Group follows rules regarding the dissemination and receipt of information within and outside the Group.

Concerning the timely disclosure of company information, supervisors nominated from each department and major Group companies obtain and release information through the Corporate Communications and IR Offices. In addition, negative information is also appropriately disclosed on the Group website and via the media.

### Communication Tools for Each Type of Stakeholder

The AGC Group employs a variety of communication tools to satisfy stakeholders' requests, such as pamphlets that introduce the Group management and initiatives (AGC Report, AGC Financial Review) and an official website. Since 2013, the Group has offered SNS (social networking services) through official AGC Facebook and Instagram pages.

### Feedback from Stakeholders via the Website

The AGC Group regularly asks for your opinions and comments regarding the AGC Report and the homepage via our website.

We take these responses into account to further improve our CSR activities, and use them in the creation of various reports, and our website.

#### ● Communication Tools for Each Type of Stakeholder

For all of our stakeholders

**AGC Integrated Report 2019**  
<https://www.agc.com/en/csr/book/>



A Broad Overview of the AGC Group's Corporate Vision, Financial and Non-financial Information

#### For all stakeholders



**AGC Website**  
<https://www.agc.com/en/>

Provides information about the AGC Group more widely, timely and in more detail

#### For shareholders and investors



**Financial Review**  
<https://www.agc.com/en/ir/library/financial/>

Reports wide-ranging information on the AGC Group in detail and in a timely manner (English only)

#### For CSR-related experts<sup>1</sup> and stakeholders with an interest in CSR



**CSR Website**  
<https://www.agc.com/en/csr/>

Comprehensively reports on the AGC Group's efforts to fulfill its social responsibilities



**Sustainability Data Book 2019 (this report)**

Reports on the AGC Group's non-financial data and its various CSR policies, promotional structures and CSR activity goals and achievements (PDF file only)

<sup>1</sup> ESG research agencies, etc

## Customers

### Group-wide Initiatives

#### Promoting Global Technology & Networking Activities

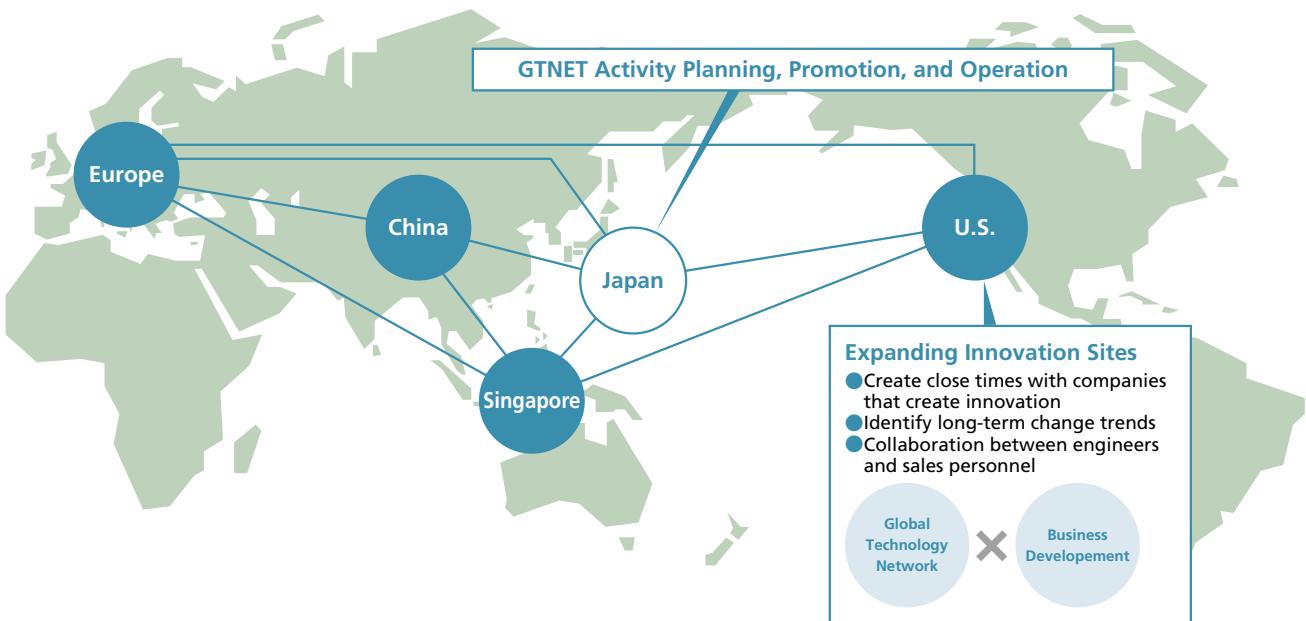
As a manufacturer of materials, the AGC Group deals with many customers in various countries and regions. Accordingly, the Group has established customer centers for each division to obtain direct customer feedback and is working on product development and improvement as well as boosting CS (customer satisfaction).

The Group is also promoting the use of proprietary Global Technology Networking (GTNET) activities to discover social issues, trends in leading markets and cutting-edge technology in a timely manner and relate findings to Group businesses. In these activities, the Group has established offices in North America (Silicon Valley), Europe (Belgium), Southeast Asia (Singapore) and China, where there are many leading electronics and IT-related corporations as well as research facilities of car makers. Through surveys on technological trends, the Group makes proposals regarding the use of new technologies.

#### Distribution of Information on Group Business, Products and Services

In addition to press releases, the AGC Group informs its customers about its businesses, products and services by operating showrooms and various other initiatives.

#### ● Global Technology Networking to Enhance R&D Capabilities



## Exhibitions Hosted

The AGC Group regularly hosts private exhibitions for customers, expanding its business through product and technology demonstrations. The Group also actively participates in exhibitions both within and outside Japan. In 2018, it exhibited at Milan Design Week (Italy) and SID—Society for Information Display (USA) to promote AGC Group initiatives.

## AGC Studio Showroom

Renovated under the theme “New discoveries with every visit” in 2017, the AGC studio showroom exhibits actual uses of AGC products and the diverse solutions they provide. Special collaboration exhibits with designers are also hosted regularly. Location: 2-5-18 Kyobashi, Chuo-ku, Tokyo Kyobashi Soseikan 1/2F

### ●International Exhibitions in 2018

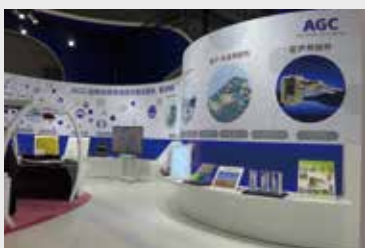
Milan Design Week	
Dates	April 17–22, 2018
Location	Milan, Italy
Details	Under the theme of “Sound-generating glass,” AGC’s “Soundscape” installation introduced how sound can be created from clear glass alone, promoting the further evolution and potential of glass.
Main visitors	Design Industry Representatives



SID 2018	
Dates	May 22–25, 2018
Location	Los Angeles, USA
Details	Under the theme of “Feel the Digital Environment!” AGC exhibited advanced glass solutions through the fusion of glass and LED, LCD, and more.
Main visitors	Electronics and IT Industry Representatives



China International Import Expo	
Dates	November 5–10, 2018
Location	Shanghai, China
Details	AGC products were promoted alongside the AGC brand in China
Main visitors	People from all walks of life





## Shareholders and Investors

### Group-wide Initiatives

#### General Shareholders' Meeting

The general shareholders' meeting provides a convenient opportunity for AGC to interact directly with its shareholders to appropriately disclose resolutions, and more. Specifically, notices of convocation are sent as early as possible and posted on the company website in both Japanese and English. Notices regarding exercise of voting rights, resolutions and results of the exercise of voting rights are posted to the homepage in both languages.



#### Dialogue with Shareholders and Investors

##### Analysts and Institutional Investors

Through briefing sessions on medium term management strategies and financial results, the AGC Group creates opportunities for direct dialogue between analysts, institutional investors and Group management. The Group also provides online audio streaming of briefing sessions in both Japanese and English. Additionally, Group executives, including the Group CEO and CFO, pay regular visits to institutional investors to promote active dialogue.



Briefing session

##### Individual Investors and Shareholders

To help individual shareholders deepen their understanding of the AGC, the Group posts self-presentation materials on the Group website.

Moreover, the Group participates in IR seminars for individual investors and provides opportunities for such investors to tour the Group's plants.

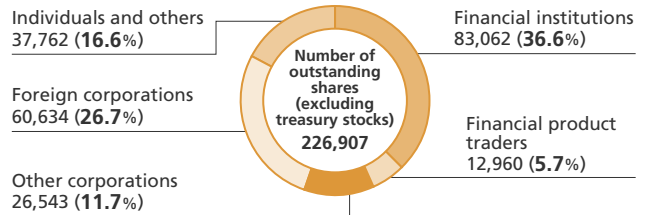
In addition, the AGC Review is published twice a year, providing easy-to-understand explanations of the Group's global business activities and products, as well as providing information about its management strategies and business performance.

#### Shareholder Returns

Based on a policy of continuing to provide more than the current annual dividend per stock, the AGC Group is doing its utmost to return profits to shareholders by aiming for a dividend payout ratio (consolidated) of more than 50%, including acquisitions of its own shares, while giving comprehensive consideration to consolidated business results and future investment plans, among others. The AGC Group will take the fundamental approach of applying retained earnings to R&D, capital investment, and loans and investments as well as merger and acquisition activities to improve its corporate value while strengthening its financial position.

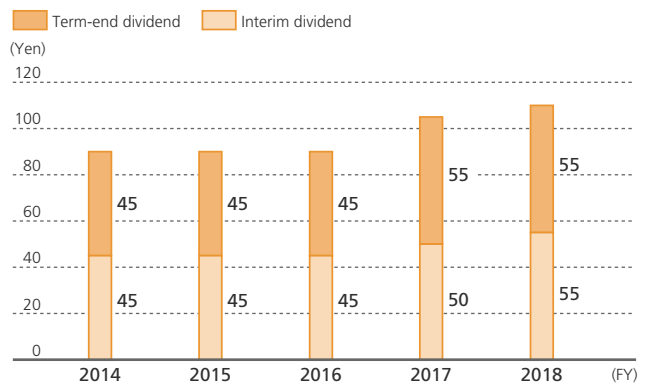
##### Number of Shares Held by Type of Investors

(as of December 31, 2018)  
(Unit : 1,000 shares)



Note The sums do not total 100% because calculations are made excluding shares in the Group purchased by the Group itself, and holders of shares less than one unit.

##### Dividends per Share



Note Dividend Per Share is calculated in consideration of the effects of the 5 into 1 share consolidation implemented at AGC on July 1, 2017.

[Homepage link: AGC Glass Information for Shareholders and Investors](#)

[Homepage link: AGC Glass External Corporate Review](#)

## Employees

### Group-wide Initiatives

#### Publication of the Group Magazine “We are AGC!”

The Group publishes an in-house magazine, We are AGC!, which is distributed to all employees and details the Group’s values and the direction it plans to take. It profiles AGC Group employees working around the world and the Group’s wide-ranging activities, helping employees and readers to deepen their understanding of the Group. The magazine is published every three months in Japanese and English.



The Group’s in-house magazine We are AGC!

#### Distribution of “AGC World” on the Intranet

AGC World, online content delivered via the Intranet, presents timely messages from top management, financial result briefings and information on other events through video. This content is created in Japanese and English and can be viewed at Group companies globally. It also includes a message from the Group CEO on the brand statement “Your Dreams, Our Challenge,” which was declared in 2018. Conversations between Group employees are also posted here, and AGC World functions as a place to effectively consider the Group’s mission as a whole.

Furthermore, in 2018, the Group CEO visited 45 locations in Japan and overseas and had conversations with approximately 4,000 employees. Rather than a one-sided message from the CEO, communication was encouraged through discussion on proposals submitted at each location. The talks were uploaded to AGC World, and the Group CEO’s answers to live questions from employees were shared effectively within the Group.



The Group CEO engaging in dialogue with employees

## Local communities, NGOs/NPOs, Governments

### Group-wide Initiatives

#### Participation in External Initiatives

The AGC Group is actively involved in initiatives in various countries and regions.

For example, AGC Flat Glass (Thailand) Public participated in the CSR-DIW Initiative promoted by the Thailand Ministry of Industry’s Department of Industrial Works (DIW) to gain CSR certification (CSR-DIW) based on ISO 26000 standards. In addition, AGC is a member of the Council for Better Corporate Citizenship (CBCC).

#### Participation in the Singapore Green Building Consortium

Singapore-based AGC Asia Pacific (AAP) has been a member of the Pre-project Innovation Consortium (PPIC) since 2014. The consortium was initiated by the Singapore government for the purpose of developing energy efficient buildings and promoting collaboration among stakeholders in the building and construction industry in Singapore. The project was concluded in July 2018; AAP has contributed three ideas/products.

In addition, every year AAP participates in Build Eco Xpo (BEX) Asia, the largest green building exhibition in Southeast Asia. At the event, which is held annually in Singapore, AAP showcases a wide range of technical solutions and sustainable products.

#### Communication with Local Communities

The AGC Group regularly communicates with the communities around its sites, working to promote understanding of the Group’s business activities among local communities with the aim of developing together with those communities. Activities are promoted on a site-by-site basis and are tailored to conditions in each region. The sites host regular dialogue meetings and plant tours for area residents and children, amongst other events.

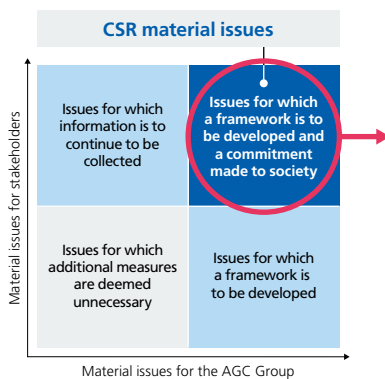
[Homepage link: AGC’s CSR—For Society](#)

[Homepage link: Site Reports](#)

# Organizational Governance

In 2011, the AGC Group began CSR monitoring based on ISO 26000. In CSR monitoring, issues defined in ISO 26000 are classified into four categories on the basis of their importance to either the AGC Group or its stakeholders. From these categories, a CSR Matrix is created, and issues judged important to both sides are recognized as CSR Material Issues. At present, there are eleven established CSR Material Issues, and their targets and current progress are provided on the following page.

**Matrix of CSR Issues**



**CSR Material Issues relating to the AGC Group**

ISO 26000 Items	Issues	AGC Group's material issues
Core subjects		
Organizational Governance	Decision-making processes and structures	<b>Organizational governance</b>
Human Rights and Labor Practices	Conditions of work and social protection	<b>Fair working conditions</b>
	Health and safety at work	<b>Occupational health &amp; safety</b>
The Environment	Human development and training in the workplace	<b>Human resource development</b>
	Prevention of pollution	<b>Pollution prevention</b>
	Sustainable resource use	<b>Sustainable use of resources</b>
Fair Operating Practices	Climate change mitigation and adaptation	<b>Climate change initiatives</b>
	Anti-corruption	<b>Anti-corruption</b>
	Fair competition	<b>Compliance with antitrust laws</b>
Consumer Issues	Promoting social responsibility in the value chain	<b>Social responsibility in the supply chain</b>
	Protecting consumers' health and safety	<b>Product safety</b>

## CSR Material Issues of the AGC Group Corresponding to Organizational Governance

### Decision-making processes and structures

#### Reasons for Selection

Organizational governance is the foundation of Core Issues in ISO 26000 and is indispensable in the promotion of social responsibility. With legislation regarding disclosure of non-financial information becoming stricter in respective countries and regions, companies are required to improve the transparency and accountability of their activities, adopting ethical behavior voluntarily.

The AGC Group recognizes that it is essential to include corporate ethics in all of its business activities in order to continue business operations.

#### ISO 26000 related actions and expectations

- Nurture an environment in which the principle of social responsibility (accountability) is practiced
- Nurture an environment in which the principle of social responsibility (transparency) is practiced
- Nurture an environment in which the principle of social responsibility (ethical behavior) is practiced
- Nurture an environment in which the principle of social responsibility (respect for the rule of law) is practiced
- Balance the authority, responsibility and ability levels of decision-makers
- Periodically review and evaluate the governance process

## Results of Activities Relating to CSR Material Issues in 2018

### P 2018 targets

#### Continue to ensure effective communications in and outside the Group

- Use a variety of communication tools to provide a simple explanation of the AGC Group's initiatives and its stance of unifying and promoting business and CSR activities, together with the new management policy **AGC plus**, which outlines the Group's long-term strategy "Vision 2025"
- Promote dialogue with all shareholders, disclose and provide information on current management policy, business performance, and major initiatives taken by the President & CEO at briefings with investors and general shareholder meetings
- Communicate opinions gleaned through dialogue with all shareholders to management and relevant in-house departments
- Through communications with stakeholders, promote appropriate response to societal demands and disclosure of information to society

#### Continue to promote compliance

- Continue to conduct ongoing compliance training and online training programs
- Continue to submit Personal Certifications
- Continue to expand and regularly conduct awareness surveys

#### Implementing effective audits and promoting the PDCA cycle

- The Group is planning to conduct 51 regular site audits in which compliance with antitrust laws, prevention from confidential information leakage, prevention of bribery and corruption, and securing the credibility of data are set as globally shared items of importance
- In addition to guaranteeing internal control, the Group will focus on advice and recommendations based on best practices for the sites subject to audits in order to improve their level of internal control

### D 2018 major initiative results

- Through the highly comprehensible AGC Report 2017, informed stakeholders about the business and CSR activities of the Group, which are based on the Group's long term management strategy, "Vision 2025," and its management policy **AGC plus**, from a cross-Group perspective
- Disclosed and provided information on current management policy, business performance and major initiatives taken by the President & CEO at briefings with investors and general shareholder meetings
- Communicated opinions gleaned through dialogue with all shareholders and investors to management and relevant in-house departments
- Continued to be selected for major SRI indices including the FTSE 4 Good Global Index, Ethibel, and MSC

- Continued to conduct ongoing compliance training and online training programs
- Continued to submit Personal Certifications
- Implemented expanded awareness surveys at Chinese group companies that do not support the AGC Group's information system (GCEP), and implemented awareness surveys in Korea, Taiwan and China

- Implementation of 47 internal audits: Compliance with antimonopoly laws, preventing confidential information leakage, preventing bribery and ensuring data credibility through audit conducted as global common priority audit items
- \*Four audits less than planned (details below)
  - Two audits transferred to pre-operation audits
  - One audit postponed to 2019
  - One audit cancelled due to closure
- Based on items detected in internal audits, advice and proposals on improving internal control were given to managers and department leaders, without limiting the scope to audit locations

### C Self- evaluation

**A**

**A**

**A**

### A 2019 targets

#### Continue to ensure effective communications in and outside the Group

- Use a variety of communication tools to provide a simple explanation of the AGC Group's initiatives and its stance of unifying and promoting business and CSR activities, as well as the Group's management policy **AGC plus** and its long-term management strategy "Vision 2025"
- Promote dialogue with all shareholders, disclose and provide information on current management policy, business performance, and major initiatives taken by the President & CEO at briefings with investors and general shareholder meetings
- Communicate opinions gleaned through dialogue with all shareholders to management and relevant in-house departments
- Through communications with stakeholders, promote appropriate response to societal demands and disclosure of information to society

#### Continue to promote compliance

- Continue to conduct ongoing compliance training and online training programs
- Continue to submit Personal Certifications
- Continue to regularly conduct awareness surveys

#### Implement highly effective business audits and improve internal control

- In a plan to implement audits at 45 standard locations, audit compliance with antitrust laws, prevention of confidential information leaks, prevention of bribery, and ensuring data credibility as global priority audit items
- Set themes that are essential to the Group and investigate them thoroughly through audits
- In addition to ensuring internal control, provide advice and proposals on improving internal control

Criteria for Self-evaluation **A**: Satisfactory level, in which the intended target has been achieved  
**B**: Almost satisfactory level, in which a part of the intended target has not yet been achieved and some issues still remain  
**C**: Unsatisfactory level, in which the intended target has not been achieved

# Corporate Governance

## Fundamental Approach

AGC is working to strengthen and improve its corporate governance with a view to raise the Group's corporate value over the medium and long terms and ensure its continuous growth. The Group has established the AGC Group Corporate Governance Basic Policy, a basic approach to its corporate governance system.

- Basic Approach to the Corporate Governance System**
- Clearly separate the management oversight and execution functions
  - Clearly define corporate and business execution functions in the context of management execution

Homepage link: AGC "Corporate Governance"

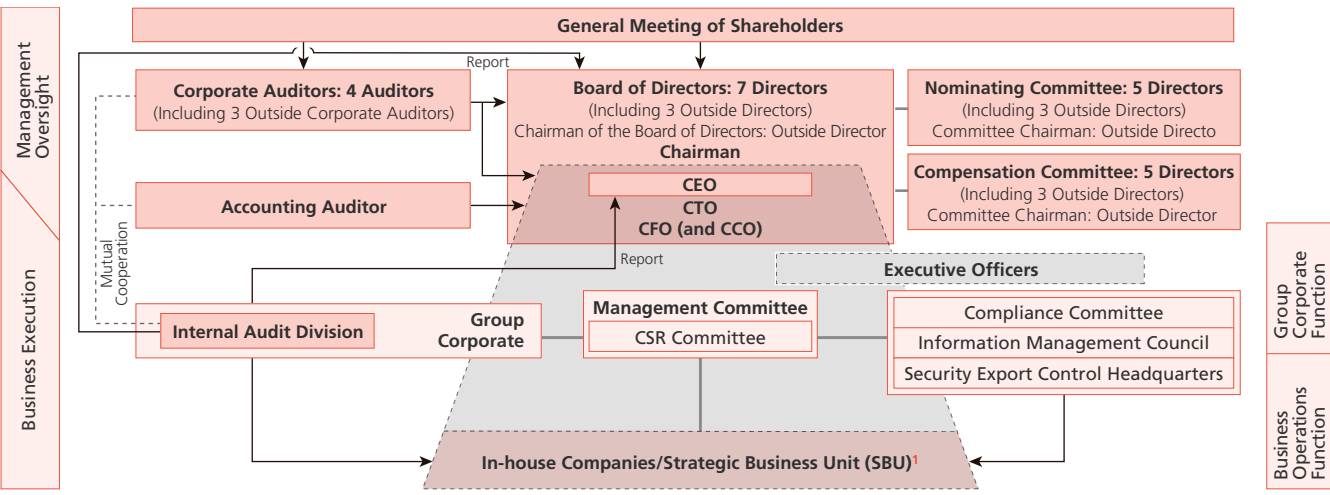
● Attendance Rate of Directors in Board of Directors Meetings

FY	Attendance rate
2016	100%
2017	98%
2018	100%

● Attendance Rate of Auditors in Board of Auditors Meetings

FY	Attendance rate
2016	96%
2017	100%
2018	100%

● Corporate Governance Structure Overview



<sup>1</sup> An In-house Company is defined as a business unit with net sales exceeding 200 billion yen which conducts its business globally. At present, there are four In-house companies: the Building & Industrial Glass Company, the Automotive Company, the Electronics Company and the Chemicals Company. Business units smaller than this are defined as Strategic Business Units (SBUs).

## Management Structure

### Internal Control

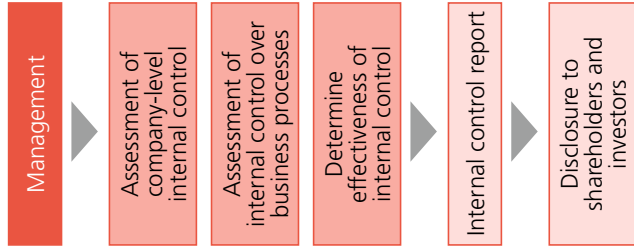
In response to the establishment of the Companies Act, AGC voted on its Corporate Policy on Internal Control at the Board of Directors meeting held in May 2006. The aim was to review and ensure the appropriateness of its business operation systems, including the compliance system.

- Basic Items for Internal Control**
1. Compliance Program
  2. Information Retention and Management System with respect to business operations
  3. Risk Management System
  4. System to ensure efficient and effective business execution
  5. System for reporting from Group companies to AGC
  6. Corporate Auditors' audit system

After introducing the Internal Control Report System in compliance with the Financial Instruments and Exchange Act, the AGC Group Internal Control over Financial Reporting Implementation Regulations was established. Based on these regulations, the Group establishes, operates and evaluates internal controls for financial reporting.

Internal control regarding financial reporting was evaluated as being effective in 2018, and an external auditor confirmed the appropriateness of the system in its evaluation.

● Processes Based on Internal Control Implementation Regulations Related to AGC Group Financial Reporting





## Risk Management

### Management Structure

The AGC Group is united in its efforts regarding risk management, and has established the AGC Group Enterprise Risk Management Basic Policies on the basis of its Corporate Policy over Internal Control, formulated by the Board of Directors. Under this basic policy, the Group has designated risks that could significantly hinder achieving various objectives of the AGC Group, dividing risk management into 1) a management level intended to control the appearance of risks and 2) a response level when such risks have manifested, and managing them accordingly.

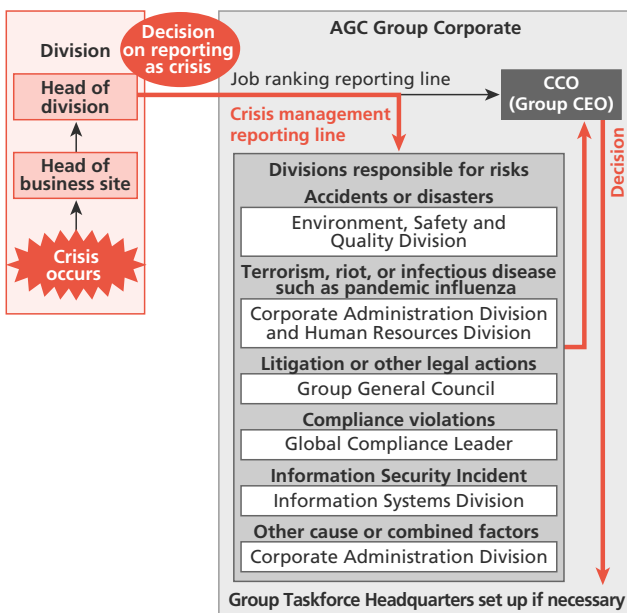
#### Responding effectively in the event a risk occurs

To prepare for a crisis that could have a serious impact on its business activities, the AGC Group has established reporting and response procedures in its AGC Group Crisis Management Guidelines, and set up a framework designed to minimize the impact of such a crisis. To respond to the occurrence of accidents and disasters in particular, accident prevention measures are undertaken at each business site, business continuity plans (BCP) have been established, and improvement measures are continually implemented to increase the Group's ability to quickly restore and resume operations.

#### Examples of risks managed by the AGC Group as a whole include those related to the following:

- Natural disasters such as earthquakes
- Procurement of resources
- Overseas business development
- Serious legal violations
- Environmental regulations
- Market conditions with regard to product demand
- Occupational accidents
- Product liability

#### ● Reporting Line During a Crisis Situation



### Group-wide Initiatives

#### Business Continuity Approach

The AGC Group has formulated the AGC Group Business Continuity Plan (BCP) Development Guidelines for use by divisions and business sites when formulating BCPs in preparation for large-scale accidents or disasters. The Group's BCP is continuously maintained and improved upon based on the business continuity management (BCM) process.

#### Formulating a BCP in Accordance with the AGC Group Basic Policy to Cope with Natural Disasters

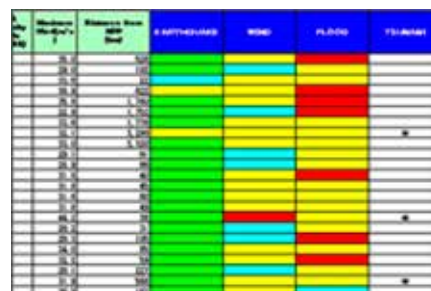
Recognizing that a large-scale natural disaster could seriously impact its business activities, the AGC Group has set four concepts to respond effectively: human life and safety first, prevention of secondary disasters, contribution to and co-existence with society, and business continuity (see page 19).

Based on these concepts, the Group has assessed risks related to earthquakes, wind damage, flooding and other natural disasters at its major business sites (about 200 around the world). It has produced hazard maps that color-code hazard risks by degree and formulated business continuity plans (BCP) for business sites that face high hazards and risks.

At every major business site in Japan and Asia, where there is a high risk of earthquakes, BCPs for earthquakes are fully developed. Furthermore, simulation drills are held every year at AGC's headquarters, with participation by the Group CEO, the heads of each division and major interested parties. These drills ensure the BCP is understood by all participants, while augmenting its effectiveness. In 2018, the Group ran an emergency earthquake drill with the supposed epicenter directly beneath the Tokyo Metropolitan Area, including theoretical training exercises and workshops prompting all divisions to actively cooperate and respond in the event of disaster.

In addition, since 2009, the AGC Group (Japan) has been using a safety confirmation system for confirming the safety of employees and their families in the event of a disaster, and practices such drills across the Group twice annually. In addition, Group companies in Southeast Asia conduct drills for responding to power outages caused by a natural disaster.

The AGC Group intends to repeat these drills in the future in order to verify how effectively the established BCP can be carried out and to continuously make improvements to the plan.



Hazard map

### AGC GROUP BASIC POLICY TO COPE WITH NATURAL DISASTERS

Human Life and safety first, prevention of secondary disasters, contribution to society and co-existence with it, and business continuity are the four basic concepts to counter natural disasters.

Based on the following concepts, the AGC Group shall plan and implement countermeasures against risks of massive natural disasters in advance. When a natural disaster occurs, the Group shall place utmost priority on the security of human lives and safety and make maximum efforts in preventing the spread of damage, supporting the local community and maintaining the Group's important business operations.

- We shall place the highest priority on the security of the lives and safety of all the people involved in the corporate activities of the AGC Group (employees and their families, customers, suppliers, and people in local community).
- We shall prevent the damage from spreading and the occurrence of a secondary disaster in order to ensure the safety of the surrounding region.
- We shall always try to coexist with the local community, and when a natural disaster occurs, we shall contribute to the community in a coordinated manner
- We shall fulfill our responsibility to the society and at the same time minimize the damage to our enterprise value by maintaining/quickly restoring the Group's important business operations.

March 1, 2011

## Internal Audits

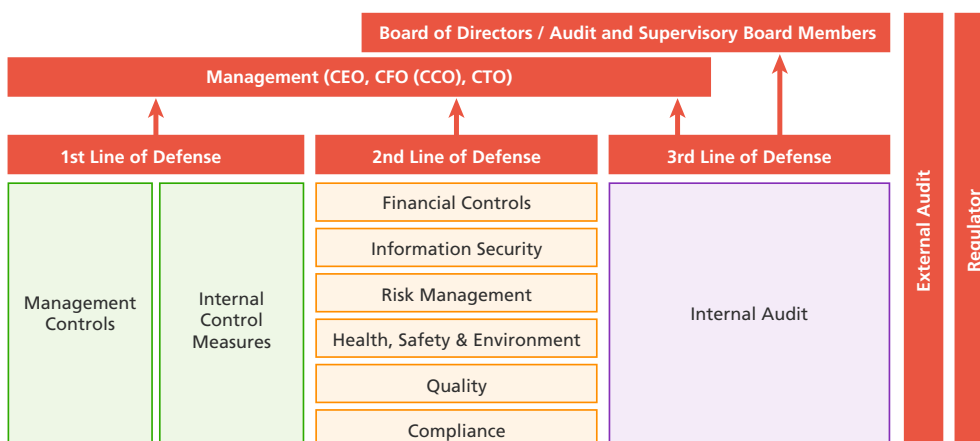
### Establishment and Operation of the Internal Control System

The AGC Group is strengthening its internal control system as detailed below:

- The Board of Directors, which has a managerial supervisory function, monitors the establishment and operation status of the AGC Group's internal control system.
- The President & CEO, who is responsible for the management's executive functions, establishes and operates the internal control system of the AGC Group.
- Audit and Supervisory Board Members monitor and verify the internal control system. Executive management functions are implemented based on the concept of the following "Three Line Defense Model."

- As the 1st line of defense, responsible persons in each in-house company, SBU and division establish and operate the internal control system of organizations under their control.
- As the 2nd line of defense, Corporate Divisions continuously monitor the establishment and operation status of the internal control system of each division and Group company.
- As the 3rd line of defense, the Internal Audit Division independently audits the establishment and operation status of the internal control system of each division.

#### •The AGC Group's Three Line Defense Model (Reference: The Institute of Internal Auditors)



### Internal Audit

In order to maintain its independence, the Internal Audit Division has established a Corporate Internal Audit Global Leader (head of the Internal Audit Division at AGC) who reports directly to the CEO, overseeing the leader of each audit division (regional leader) established in Japan, Asia, Europe and North America.

Under this system, audit departments in each region promote the establishment, operation and improvement of Group companies' internal control through effective and efficient auditing. In addition, the Corporate Internal Audit Global Leader promptly reports important matters detected by audits to the CEO and also regularly reports to Audit and Supervisory Board Members and corporate auditors.

A number of common global auditing items have been established. In 2018, 47 targets were audited, focusing on (1) Compliance with Antitrust Laws and Regulations, (2) Information Security, (3) Anti-Bribery Control and (4) Data Accuracy. When selecting items for audit, the Group uses criteria established on the basis of risk.

In addition, the Group conducts "pre-operational and M&A audits" to assess the internal control status of newly established companies and M&A companies. In 2018, such audits were performed in Asia including Japan (2 cases), Europe (2 cases) and North America (1 case).

Additionally, Group-wide crucial "thematic audits" were also carried out on specific themes, providing even deeper results.

### EHSQ Monitoring

In the AGC Group, each division and Group company conducts internal audits as the first line of defense to assess their progress in Environment, Occupational Health & Safety and Quality (EHSQ) activities.

As the second line of defense, the Environment, Safety and Quality Division, which is a corporate division, works to ensure thorough implementation of the Plan-Do-Check-Act (PDCA) cycle in each division and Group company by conducting lateral monitoring across the Group and reports relevant results to the CEO.

As the third line of defense, an auditing expert from the Environment, Safety, and Quality Division participates in audits carried out by the Internal Audit Division and reports to the CEO on major risks detected in Group company audits.

#### ● Global Internal Auditing Structure



# Compliance

## Fundamental Approach

### Formulating a Group-Wide Code of Conduct

Compliance is the fundamental premise underlying the Group's business activities. To that end, the AGC Group Code of Conduct sets forth requirements for all employees in the workplace. The code comprises global requirements of business conduct that all employees must follow regardless of country or region, and regional supplements that take into account the laws and business customs of those locales. By the end of June 2019, 13 editions of the AGC Group Code of Conduct had been issued in 19 languages.

#### Items for the AGC Group Code of Conduct Global Requirements

1. Foundations for Compliance
2. Fair Competition and Antitrust
3. Workplace Health and Safety
4. Environment
5. Respect for People
6. Quality and Safety of Products and Services
7. Reports and Records
8. Insider Trading
9. Company and Third-Party Assets and Confidential Information
10. Conflict of Interest
11. Gifts and Entertainment
12. Relations with Government Officials and Politicians
13. International Trade Controls

The working regulations of each AGC Group company state that a violation of the AGC Group Code of Conduct is grounds for disciplinary action. In addition, if an employee voluntarily reports his or her own Code of Conduct violation, this will be taken into consideration when determining disciplinary action.

The contents of Material Issues for CSR activities in the AGC Group (selected through the CSR monitoring framework based on ISO 26000 ) are related in the following table to the respective Code of Conduct Global Requirement items.

#### Relationship with CSR Material Issues

Material Issues (ISO 26000: Issue Base)	Corresponding code of conduct Global Requirements
Decision-making processes and structures	1. Foundations for Compliance 7. Reports and Records
Conditions of work and social protection	5. Respect for People
Health and safety at work	3. Workplace Health and Safety
Human development and training in the workplace	5. Respect for People
Prevention of pollution	3. Workplace Health and Safety 4. Environment
Sustainable resource use	4. Environment
Climate change mitigation and adaptation	4. Environment
Anti-corruption	11. Gifts and Entertainment 12. Relations with Government Officials and Politicians
Fair competition	2. Fair Competition and Antitrust
Promoting social responsibility in the value chain	4. Environment 5. Respect for People etc.
Protecting consumers' health and safety	6. Quality and Safety of Products and Services

## Management Structure

### Establishment of Global Compliance System

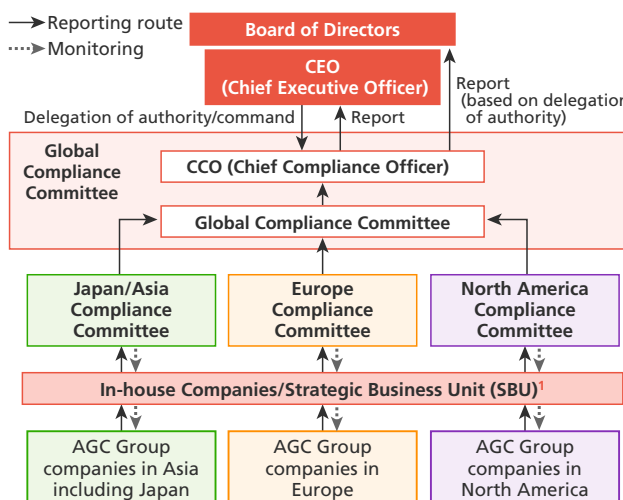
The AGC Group has established a Chief Compliance Officer (CCO) responsible for development of the compliance framework and promotion of compliance in the AGC Group. Under the supervision of the CCO, a Global Compliance Leader, Global Compliance Committee and local Compliance Committees are established to plan and implement compliance programs and monitor respective regions' compliance efforts. Reports are regularly made to the Board of Directors regarding group-wide policies and the current status of the compliance system.

In accordance with the guidelines of the compliance reporting system, serious compliance violations are promptly reported to top management.

### Submission of Personal Certification on the Code of Conduct

The AGC Group has introduced a system in which its employees periodically submit a personal certification to follow the AGC Group Code of Conduct. The goal of the system is to turn the submission of certifications into an opportunity for every single employee to renew their awareness of compliance and take a fresh look at business affairs and the workplace.

#### Global Compliance System



1 SBU is a counter for Strategic Business Units

## Group-wide Initiatives

### Establishing Different Help Lines

The AGC Group has established several varieties of help lines to serve as consultation desks regarding the Code of Conduct.

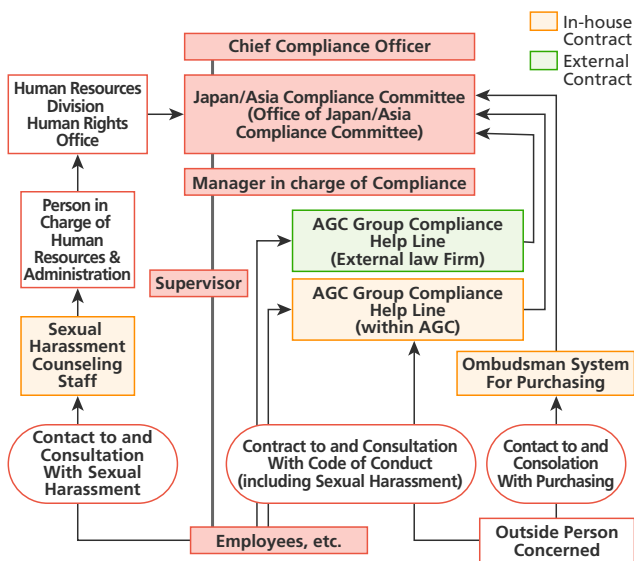
As a general rule, help lines are set up at each company, while additional area-wide help lines are established in Europe, North America and Asia. In Japan, employees can also contact external lawyers.

To encourage employees to use the help lines, the Group protects the anonymity of anyone reporting and strictly forbids any act of retaliation against anyone who makes a report in good faith.

When those who report offer their real names, efforts are made to facilitate effective two-way communication and provide feedback on the status and results of handling reported issues.

For the purpose of providing help line contact information, help line numbers are listed in the AGC Group Code of Conduct distributed to all employees. They are also publicized in each country and region through efforts such as placing posters at each site.

#### ● Help Line Reporting Route (AGC)



#### ● Help Line Consultations (AGC Group)

FY	Number of consultations
2018	Approx. 340

### Implementing Compliance Training

In order to promote the Code of Conduct globally, the AGC Group provides various training opportunities to its employees around the world, and has placed particular emphasis on strengthening compliance training worldwide.

For example, the Group continually implements compliance-related online training (e-learning) in Japan, Europe and North America. The Group also proactively promotes training activities intended to reinforce compliance in each country and region, including classroom training as well as the production of training materials that include illustrations and quizzes, compliance pocket-sized cards, video materials for training and educational posters.



### Implementing Compliance Surveys

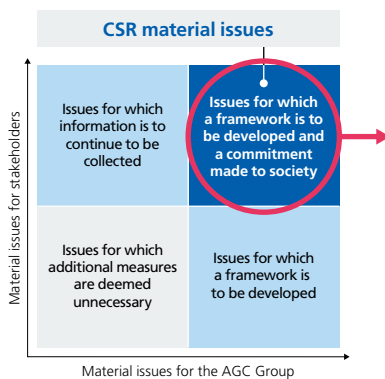
The AGC Group uses surveys to gauge the level of compliance in the workplace and the ease of use of help lines. Based on the results, any necessary measures are implemented.



# Human Rights and Labor

In 2011, the AGC Group began CSR monitoring based on ISO 26000. In CSR monitoring, issues defined in ISO 26000 are classified into four categories on the basis of their importance to either the AGC Group or its stakeholders. From these categories, a CSR Matrix is created, and issues judged important to both sides are recognized as CSR Material Issues. At present, there are eleven established CSR Material Issues, and their targets and current progress are posted on the following page.

Matrix of CSR Issues



CSR Material Issues relating to the AGC Group

ISO 26000 Items	Issues	AGC Group's material issues
Core subjects		
Organizational Governance	Decision-making processes and structures	<b>Organizational governance</b>
Human Rights and Labor Practices	Conditions of work and social protection	<b>Fair working conditions</b>
	Health and safety at work	<b>Occupational health &amp; safety</b>
	Human development and training in the workplace	<b>Human resource development</b>
The Environment	Prevention of pollution	<b>Pollution prevention</b>
	Sustainable resource use	<b>Sustainable use of resources</b>
	Climate change mitigation and adaptation	<b>Climate change initiatives</b>
Fair Operating Practices	Anti-corruption	<b>Anti-corruption</b>
	Fair competition	<b>Compliance with antitrust laws</b>
	Promoting social responsibility in the value chain	<b>Social responsibility in the supply chain</b>
Consumer Issues	Protecting consumers' health and safety	<b>Product safety</b>

## CSR Material Issues of the AGC Group Corresponding to Human Rights and Labor Practices

### Conditions of work and social protection

#### Reasons for Selection

Company employees expect a working environment that fully values their health and safety, and also request that regulations concerning working conditions and employee protection are observed. The AGC Group operates in approximately 30 countries and regions. The Group complies with all local labor-related laws and regulations and is aware that promoting the creation of work environments in which employees can work with satisfaction and pride is important to its business activities.

#### ISO 26000 related actions and expectations

- Confirm the compliance of work condition with national laws and regulations and international labor standards
- Comply with any obligation concerning the provision of protection for workers in the country of operation
- Comply with the working hours established in laws or regulations

### Health and safety at work

#### Reasons for Selection

Corporations seek to create a workplace environment and working conditions that are safe and healthy for employees. Conscious that it has a workplace at which the risk of occupational accidents is comparatively high, the AGC Group identifies Safety as a business activity prerequisite in its management policy **AGC plus**, and places great importance on the creation of a working environment where employees can work under safe and healthy conditions.

#### ISO 26000 related actions and expectations

- Develop, implement and maintain policy on occupational health and safety
- Understand and apply principles of health and safety management (elimination, substitution, engineering controls, administrative controls, work procedures and personal protective equipment)
- Analyze and control the health and safety risks in organizational activities

### Human development and training in the workplace

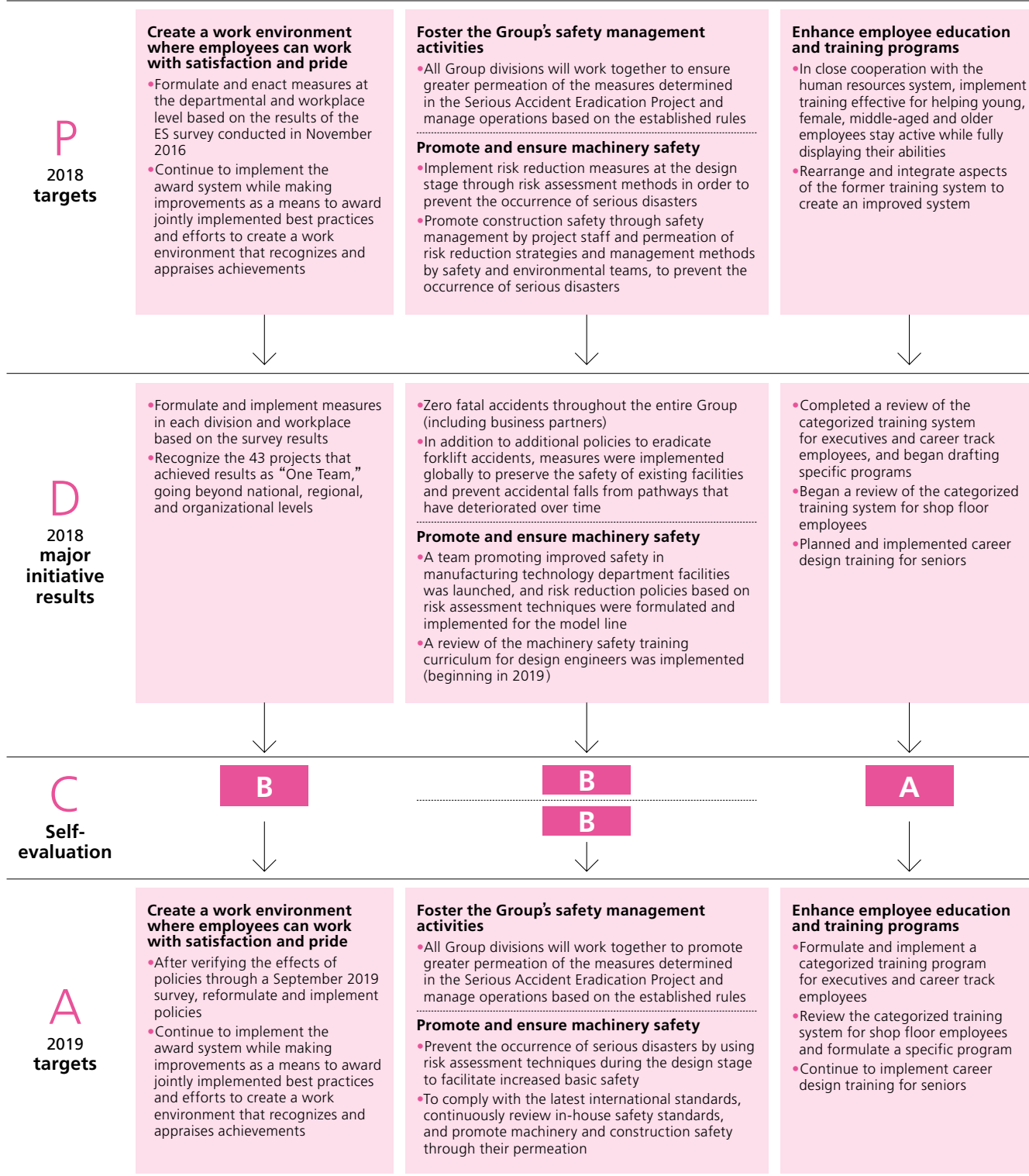
#### Reasons for Selection

Corporations are expected to provide opportunities for their employees to grow, develop their abilities and skills and improve their standard of living, from financial, social and cultural viewpoints. The AGC Group believes that human resources are the driving force behind the AGC Group's business operations, and that creating a framework that supports the growth of its employees is important.

#### ISO 26000 related actions and expectations

- Provide all workers at all stages of their work experience with access to skills development, training and apprenticeships
- Provide all workers at all stages of their work experience with access to opportunities for career advancement

## Results of Activities Relating to CSR Material Issues in 2018



Criteria for Self-evaluation **A:** Satisfactory level, in which the intended target has been achieved  
**B:** Almost satisfactory level, in which a part of the intended target has not yet been achieved and some issues still remain  
**C:** Unsatisfactory level, in which the intended target has not been achieved

## Human Resources Management

### Fundamental Approach

To continuously evolve as a truly global enterprise, the AGC Group has set the 7 Key Principles for People aimed at realizing progressive human resources management.

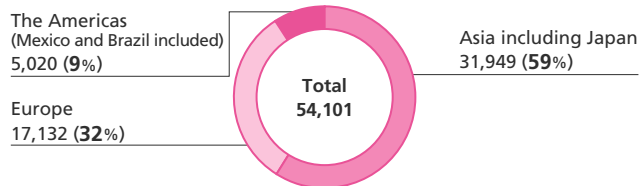
### Management Structure

In the AGC Group, the human resources division takes initiative in conducting human resources management in line with the 7 Key Principles for People, which define our philosophy towards human resources management.

With regards to labor laws and practices in each country or region as well as employees' understanding of their roles, the Group works in cooperation with HR representatives in each company and region to execute the principles.

#### ● Number of Group Employees by Region (AGC Group)

(as of December 31, 2018)



### AGC Group “7 Key Principles for People”

The AGC Group wishes to pursue these principles as the foundation of our “7 Key Principles for People” to maximize our performance as a truly global corporation.

#### Implementation of “*Look Beyond*”

AGC Group requires all employees to commit to our Shared Values of “*Look Beyond*”—Our four Shared Values: Innovation & Operational Excellence, Diversity, Environment, and Integrity

#### Diversity for Organizational Competitiveness

AGC Group builds teams of diverse people who support our four Shared Values of “*Look Beyond*” and have the abilities to contribute to organizational competitiveness.

#### Development and Growth

AGC Group encourages employees to grow and provides them with opportunities for self-development.

#### Job Satisfaction and Pride

AGC Group encourages employees to achieve their goals so that they feel a sense of pride and satisfaction in their work.

#### Work Environment and Conditions

AGC Group provides a safe and healthy work environment.

#### Open Communication

AGC Group emphasizes open communication in the workplace to create a better organizational climate.

#### Evaluation, Recognition and Rewarding Performance

AGC Group evaluates and recognizes employees who contribute to the organization and rewards their contributions.

## Group-wide Initiatives

### Fostering Global Leaders

The Group identifies talent from all over the world, regardless of nationality and gender, in order to promote fostering global leaders who can lead the global group forward in a systematic and organized way. The Group trains diverse talent at the global, national and regional level.

In an effort to promote the localization of business management for Group companies in each region, the Group encourage assignments and projects outside the home country as well as Group-wide training courses and on-site training, in accordance with the current status of respective businesses and regions.

In 2018, the Group hosted a global program to develop talented management personnel for Group companies and divisions in all countries and regions where they operate.

#### ● The AGC Group's Leader Training Programs



## AGC Initiatives

### Human Resource Management System

AGC manages employees fairly in consideration of their abilities and performance. The company aims to provide its diverse range of employees with the systems and environments necessary to help them perform their jobs, without discrimination based on gender, age or disability.

For that reason, the company clarifies employees' roles, functions and responsibilities, and utilizes and evaluates capable employees fairly regardless of age, length of service or gender.

#### ● Number of Employees at AGC

As of December 31, 2018 excluding those dispatched from other Group Companies

Classification	Male	Female	Total	Percentage of Female	
Managers	2,794	147	2,941	5.0%	
Non-Managers	Career-track positions	737	163	900	18.1%
	Shop-floor workers	3,093	104	3,197	3.6%
	Clerical positions	20	516	536	96.3%
Subtotal	3,850	783	4,633	16.9%	
<b>Total</b>	<b>6,644</b>	<b>930</b>	<b>7,574</b>	<b>12.3%</b>	

#### ● Employee-Related Data of AGC

As of December 31, 2018

Item	Male	Female	Total
Average age	43	42	43
Average length of service	18 years	15 years	18 years
Average overtime working hours	20 hours/month (average for members of the labor union)		
Percentage of paid leave taken	93.4% (average for members of the labor union)		

#### ● Number of Employee Retiring (AGC)

Period: April 2018 to March 2019

- excluding employees retiring upon reaching mandatory retirement Age

	Number of people
Retirees	101

#### ● Retention Rate of New Employees (AGC)

Year of recruitment	New recruits	Retained employees <sup>1</sup>	Retention rate
2015	48	47	97.9%

<sup>1</sup> As of April 2019

## Respecting Human Rights

### Fundamental Approach

In 2011, the United Nations Human Rights Council announced its Guiding Principles on Business and Human Rights. Among the stated principles is “the responsibility of companies to respect human rights.” As an initiative in line with this principle, the AGC Group—a company that values human rights—created a definition of “Respect for People” in the AGC Group Charter of Corporate Behavior.

Furthermore, regarding employees’ rights to freedom of association and collective bargaining, the Group complies with the laws and regulations of each country or region and respects the relevant international norms.

### Management Structure

The AGC Group conducts human rights efforts in collaboration with relevant departments. The human resources department is responsible for human rights issues within the group, and the CSR Department deals with human rights due diligence in the supply chain. In addition, the compliance department plays a central role in conducting human rights training within the Group.

### Group-wide Initiatives

#### Responding to Issues Regarding Human Rights and Labor Relations

The human resources department and relevant workplaces cooperate to deal with human rights and labor relations issues. The Group also responds seriously to claims and comments received via the homepage and other channels, from persons inside and outside the company.

#### Regular Self-Assessment of Human Rights and Labor Practices

The AGC Group conducts self-assessment of human rights and labor practices every three years at Group companies in and outside of Japan in order to ascertain the status of respecting human rights and the labor practices within the Group. The Group carried out such assessment at 190 companies in 2016, and responded promptly to cases requiring rectification. The next round of assessment is scheduled in 2019, after the Group updates its checklist based on social trends and other factors.

Through a Supplier CSR Survey periodically carried out at suppliers, the Group seeks to understand the current situation and initiatives of human rights and labor practices in the supply chain. The Supplier CSR Survey investigates not only human rights and labor practices, but also overall CSR endeavors.

#### Support for the UK Modern Slavery Act

AGC Chemicals Europe released the following official statement in accordance with the UK Modern Slavery Act 2015. Annual Statement on Slavery and Human Trafficking [https://www.agcce.com/PDFs/Annual\\_Statement\\_on\\_Slavery\\_and\\_Human\\_Trafficking.pdf](https://www.agcce.com/PDFs/Annual_Statement_on_Slavery_and_Human_Trafficking.pdf)

#### ● Important Human Rights Issues in the Chemical and Construction Material Industries

Core operation/ Supply chain	Workplace conditions	Working hours
		Health and safety
		Disciplinary measures
	Discrimination	During work
		Redundancy and dismissal
	Forced or compulsory labour	Deposits and papers
		Forced overtime
		Trafficking in human
	Freedom of association	Freedom of association and collective bargaining
		Conflict with local law
Community	Resources	Use of natural resources
Society and government	Relations with governments	Bribery and corruption
		Gov'ts with poor human rights records
	Relations with consumers	Health and safety

## AGC Initiatives

### Measures to Deal with Human Rights Issues and Harassment

At AGC, the Human Rights Office and the Legal Division Compliance Group work together to provide employees with a work environment that is free from discrimination or harassment, providing compliance training programs and preventing harassment. For early detection of problems, AGC has set up internal and external contacts, including a helpline, for persons to seek advice. In the event a problem occurs at the workplace, the Group addresses it not only by re-educating the individuals involved, but also by treating it as an organizational issue for the workplace where the problem arose. Moreover, the helpline can be used not only by employees at AGC, but also by employees of the entire Group.

Regarding issues of harassment, such as sexual or power harassment, the Group holds rank-specific training and workplace dialogue meetings to prevent and stop such behavior. The Group also encourages employees in difficulty to seek advice as early as possible if they encounter any form of harassment so the issue can be resolved.

### Freedom of Association and the Right to Collective Bargaining

Within AGC, the employees' union—the AGC Labor Union—works to maintain and strengthen healthy labor-management relations. In labor-management negotiations, both sides take a logical and reasonable attitude to solve problems through discussion. The labor union negotiates with the management on working and other conditions for its members. The union managers and directors of AGC have meetings that are focused on management of the entire business at least twice a year.

### ● Data about the Labor Union (AGC)

FY	Number of members <sup>1</sup>	Average age	Average length of service
2014	3,955	38.9	15 years and 11 months
2015	3,815	39.6	16 years and 10 months
2016	3,766	40.3	17 years and 4 months
2017	3,954	40.1	16 years and 4 months
2018	4,154	39.4	15 years and 1 month

<sup>1</sup> AGC adopts a union shop system under its labor agreement.

## Raising Employee Job Satisfaction and Pride (ES)

### Fundamental Approach

The AGC Group carries out activities to increase employees' job satisfaction and pride.

They allow employees to explore ways to cultivate an improved organizational climate through diverse dialogues with management, including the Group's executives, applying the concepts of effective communication and employee participation. These initiatives are also an effort to incorporate these concepts into daily management.

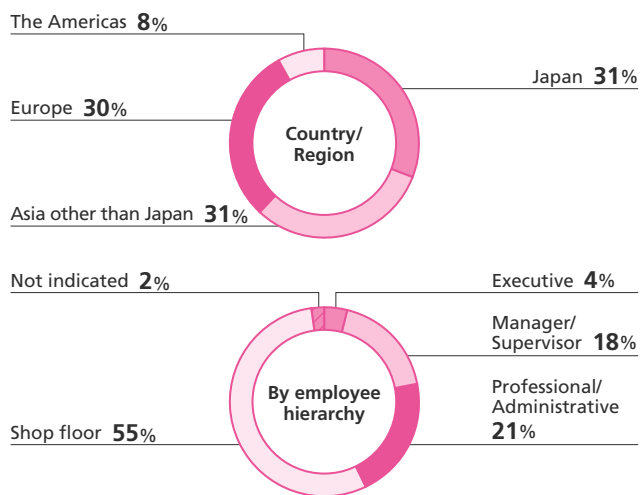
### Group-wide Initiatives

Since 2005, every three years the Group conducts employee awareness surveys targeting employees of Group companies worldwide, with the aim of improving the organizational climate. Based on the results of the surveys, the Group formulates and executes necessary policies at individual divisions or workplaces, and confirms the efficacy of the policies in the following survey.

The most recent employee awareness survey (the fifth such survey) was carried out in November 2016 across 21 languages, targeting 43,500 Group employees and aimed at developing initiatives that solve workplace problems through active and open discussion.



● Employee Awareness Survey Respondents by Region/Job (5th Survey)



● Employee Awareness Survey Respondents

	Eligible employees	Respondents	Response rate
First survey (conducted in July 2005)	9,247	8,435	91%
Second survey (conducted in November 2007)	40,100	31,126	78%
Third survey (conducted in November 2010)	39,055	31,729	81%
Fourth survey (conducted in November 2013)	40,321	33,214	82%
Fifth survey (conducted in November 2016)	43,546	36,773	84%

● Employee Awareness Survey Question Items

Employee Engagement	Employee Enablement	Review of Previous Measures
1. Clear and Promising Direction 2. Leadership 3. Quality and Customer Focus 4. Respect and Recognition 5. Development Opportunities 6. Compensation	1. Performance Management 2. Authority and Empowerment 3. Resource 4. Collaboration 5. Work Efficiency	“Look Beyond”

Establishment of the AGC Group CEO Awards System

The AGC Group has set up a global system for offering CEO awards, with the goal of creating a positive corporate culture that recognizes the contributions and efforts of its members. Information on the award-winning activities is shared via the intranet website. To maintain a high level of motivation for its employees, the Group is constantly rethinking ways to acknowledge and commend their contributions.

● Commendations Awarded Across the AGC Group 2018

Division	Number
Architectural and Industrial Glass	8
Automotive	8
Electronics	8
Chemicals	8
Applied Glass Materials General Division	2
AGC Ceramics	2
CTO Office <sup>1</sup>	5
CFO Office <sup>2</sup> and Internal Auditing	2
<b>Total</b>	<b>43</b>

<sup>1</sup> Technology General Division, Productivity Innovation Division, Business Development Division, Intellectual Property Division, Environment, Safety and Quality Division

<sup>2</sup> Management Planning Division, Administration, Public Relations and IR Division, Legal Affairs, Human Resources, Finance and Control, Purchase and Logistics and Information Systems Divisions

Maximizing Employee Potential Through Diverse Working Styles

The AGC Group has described its long-term growth strategy in “Vision 2025.” To put this strategy into practice, the Group has been reviewing working styles since 2016 that allow each employee to work to their full potential, and working environments that allow Group employees to work creatively.

In 2017, for example, the Group implemented a system at AGC proper that gives employees time off in the case of their spouse transferring jobs, and a system that provides teleworking options—not only limited to cases of childcare or nursing care. Also, the Group has revamped its re-employment registration system, envisioning potential life stage changes for once-retired employees. The introduction of these systems promotes more flexible and diverse working styles.

The Group will continue to encourage the use and establishment of these systems. By doing so, AGC aims to be a company that succeeds because of their human resources—the largest asset in the Group—and draws out their maximum potential.

In order to maximize their potential, it is crucial to guarantee the physical and mental wellbeing of each employee, which directly leads to increased employee activity, satisfaction and productivity. This is the foundation of a company that succeeds because of their human resources. To this end, the Group actively supports “Healthy Management” initiatives applicable to AGC as a whole.

## Work-Life Balance

### Fundamental Approach

The foundation of the AGC Group's human resource management, the 7 Key Principles for People, outline how to maintain a work environment that allows employees to work safely. Based on these principles, the Group seeks to secure and maintain a work environment and conditions that allow employees to work with enthusiasm.

### Management Structure

The human resources department is the main body in the AGC Group working to ensure a quality work-life balance for Group employees. Based on the laws and practices of each country and each region, the Group considers work-life balance on a company-by-company basis, in light of the nature of business conducted by the company in question.

### AGC Initiatives

AGC is improving its workplace environment with the aim of helping its employees perform their jobs with peace of mind and fully demonstrate their abilities at every stage of their lives. More specifically, in addition to maintaining a system for work-life balance, AGC creates an environment that facilitates use of these systems.

### Supporting Employees Caring for Children or Family Members

AGC has implemented several systems for employees who care for children and family members, including a childcare leave system, a child nursing leave system and a shortened working hour system.

#### ● Comparison between AGC's System and Legal Requirements

Ordinance	Particulars	AGC's system
Childcare leave	<ul style="list-style-type: none"> <li>Available until the child becomes two years old (if daycare accommodations cannot be found after 1 year and 6 months, childcare leave may be used until age 2)</li> </ul>	<ul style="list-style-type: none"> <li>Available until the child becomes two years old</li> </ul>
Shortened working hours for childcare	<ul style="list-style-type: none"> <li>Available until the child becomes three years old</li> <li>Employers are required to make efforts to shorten the working hours of employees with children aged three years or older, until the child enters elementary school.</li> </ul>	<ul style="list-style-type: none"> <li>Working hours can be shortened by up to 2.5 hours per day until the child completes third grade education at elementary school. This system is available on a multiple basis. After a certain period has passed since starting to use this system, the employee may alter their application details (the number of hours they wish to have reduced, their work starting and finishing times, etc.)</li> </ul>
Capping of the number of overtime and holiday working hours for childcare	<ul style="list-style-type: none"> <li>The overtime working hours should not exceed 24 hours per month or 150 hours per year if an employee with a pre-elementary school-aged child so requests.</li> </ul>	<ul style="list-style-type: none"> <li>If an employee so wishes, their overtime and holiday working hours may be reduced to zero until their child completes third grade education at elementary school.</li> </ul>
Other		<ul style="list-style-type: none"> <li>Flextime system without "core working hours"</li> <li>Support for using facilities and services for childcare under the selective benefits package system</li> <li>System of affiliated day-care center use in areas of high need</li> <li>A telework system that supports-rearing or family care (unlimited number of uses)</li> <li>A system in which employees, as a general rule, assume the same job after returning from leave</li> </ul>

In 2012, the Group introduced a flexible work-from-home system that eliminates commute time and allows employees to spend more time with their children and others requiring care.

In recognition of the results of these various initiatives, in 2008, 2011 and 2015 AGC was certified by the Tokyo Labor Bureau of the Ministry of Health, Labour and Welfare, based on the Act on Advancement of Measures to Support Raising Next-Generation Children, and authorized to use the Kurumin certification mark to indicate its support for the next generation.

#### ● Employees Taking Childcare/Family Care Leaves

FY	No. of employees who took childcare leave	No. of employees who took family care leave
2014	96 (Including 2 male employees and 2 employees taking short-term childcare leave)	1
2015	99 (Including 12 male employees and 7 employees taking short-term childcare leave)	1
2016	87 (Including 7 male employees and 7 employees taking short-term childcare leave)	5 (Including 1 employee taking short-term nursing leave)
2017	76 (Including 11 male employees and 7 employees taking short-term childcare leave)	2 (Including 1 employee taking short-term nursing leave)
2018	97 (Including 16 employees taking short-term childcare leave)	7 (including 3 employees taking nursing leave)

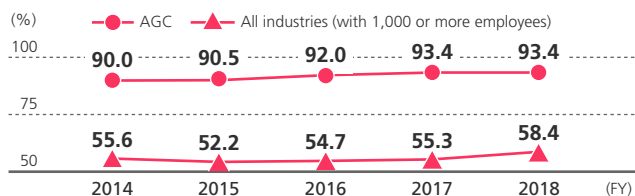


Next Generation Support Certification Mark "Kurumin"

### Promoting Annual Paid Leave (AGC)

The percentage of leave consumed came to 93.4% (labor union member average) at AGC in 2018. As a part of the annual paid leave system, the Group has also introduced a half-day leave system for employees.

#### ●Average Percentage of Annual Paid Leave Used



Note 1 Labor union member average

Note 2 Data for all industries is sourced from a General Survey on Working Conditions by the Ministry of Health, Labour and Welfare

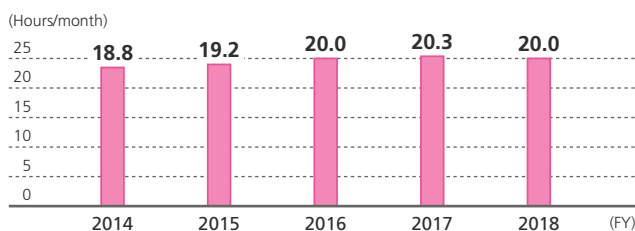
### Reducing Overtime Working Hours

AGC strives for proper management of working hours. Currently, based on the idea that the Group will strive to reduce overtime and holiday work by finding ways to work more efficiently, and ensure that unpaid overtime is not worked, the Group (1) manage daily work through sufficient communication between administrators and their subordinates; (2) implement agreements with the labor union based on Labor Standards Law; and (3) promote appropriate management of working hours using data recorded by ID card readers.

To prevent health complications caused by overwork, AGC has set in-house standards, which are stricter than those mandated by law, requiring employees who have completed a certain amount of overtime to visit an occupational physician.

In addition, sharing of case studies is promoted so that human resources managers at each Group company in Japan can discover activities that promote effective management of work hours.

#### ●Trends in Overtime Working Hours (AGC)



## Global Promotion of Diversity

### Fundamental Approach

The AGC Group has highlighted the importance of diversity—the source of the Group’s competitiveness in the long term—in “Our Shared Values” from the Group Vision **“Look Beyond”**, and strives to achieve such diversity. “Diversity for Organizational Competitiveness” is addressed in the 7 Key Principles for People, which aims at realizing progressive human resources management. “Respect for People” is discussed in the Charter of Corporate Behavior. Based on these guidelines, the Group strives to create fair and open workplace environments free of discrimination.

### Management Structure

In the AGC Group, the human resources department is the main player in setting goals for achieving diversity. Concrete measures are devised in cooperation with human resource departments in each company and region.

### Group-wide Initiatives

#### Hiring Diverse Personnel

To strengthen the Group’s brand as a global employer, the AGC Group has created a standard recruiting website for Japan, Europe and Thailand, featuring a consistent recruitment brand message for the Group.

Since 2010, when hiring new graduates for career-track positions, AGC has boosted efforts to hire Japanese and non-Japanese students graduating from overseas universities as well as foreign students graduating from Japanese universities. In fiscal 2018, the company hired two new non-Japanese graduates.

Also, the Asia Pacific region is an important location in AGC’s business strategy. To accelerate new business and market development, the local holding company AGC Asia Pacific was established in Singapore in 2013, and regardless of country of origin, the Group is hiring ambitious, highly capable talent from both inside and outside the region.

#### ● Foreign Nationals Hired during New Graduate Recruitment for Career-Track Positions (AGC)

Fiscal Year	Exchange students in Japan	Graduates of Overseas Universities
2014	2	1
2015	2	0
2016	4	0
2017	1	0
2018	1	1



The recruiting webpage for Japan



The recruiting webpage for Europe

#### Women’s Career Development

The AGC Group is promoting the career development of its female members, in accordance with the principle of global management without regard to gender, as declared in the “Diversity” section of the Group Vision **“Look Beyond”**. At present, women hold 5.9% of management positions at AGC proper.

Guided by the AGC Group Charter of Corporate Behavior, the Group is striving to create fair and open environments at its workplaces, free of discrimination based on gender or any other characteristic.

AGC has appointed one woman as an outside director on its Board of Directors and one woman as an Audit & Supervisory Board Member. The company actively employs women and creates a workplace environment facilitating the career development of female employees.

## AGC Support

### Further Employment and Promotion of Female Employees

AGC aims to make the most of diversity in the workplace, and developing the talents of female employees is a top priority. The Group (1) assigns female staff to director and managerial positions and is actively expanding the hiring of skilled female staff, creating a workplace where they flourish and (2) implements necessary systems and frameworks to create a workplace environment in which women can demonstrate their abilities.

With regard to recruitment, in 2011 AGC set a target specifying that at least 20% of new graduates hired for career-track positions be female; in 2018, 17.4% of the new graduates hired were female. Also, female staff members are being assigned to director positions and provided a workplace where they can thrive. To create a supportive environment, AGC created a waiting list rehiring system that registers employees who have left the company but hope to return to work. This system prioritizes hires from the list over the external human resource market. In addition, AGC introduced a mentoring system for female employees, through which senior female staff provide guidance to junior female staff. AGC also set up a daycare support system, establishing corporate contracts with daycare centers. This ensures support for employees who have difficulty starting or returning to work due to a lack of open nursery school spaces. As of 2016, AGC has concluded contracts with two daycare centers in Tokyo and Yokohama. This system is available to both male and female employees. Additionally, in order to realize more efficient and flexible working styles, the potential applicants and applicable number of uses of the work-from home system have been expanded.

#### ●Trends in Percentage of Female Managers (Excluding those on temporary assignment to or from AGC, Inc.)

FY	Proportion of female employees
2014	5.1%
2015	5.2%
2016	5.4%
2017	5.4%
2018	5.9%

#### ●Number of Female New Graduates Recruited for General Career-Track Positions

FY	Number of new female graduates	Total new graduates	Percentage of female employees
2016	15	75	20.0%
2017	18	98	18.4%
2018	23	132	17.4%

### Employment of Senior Citizens

In April 2006, AGC introduced a system to continuously employ retiring non-managers who meet personnel criteria for continuous employment. The criteria are provided in the labor-management agreement with the aim of utilizing the expertise, technologies and skills of retirees and reinforcing personnel ranks.

Since 2013, AGC has been gradually raising the age limit of employees eligible to apply for continuous employment, in accordance with a revision of the Law Concerning Stabilization of Employment of Older Persons, and plans to abolish age limitations by 2025.

Similarly, going beyond legal stipulations, AGC has been gradually raising its retirement age, currently set at 60, since 2015, and will bring it up to 65 in 2025. This will allow employees over 60 to continue thriving in important positions in the workplace.

#### ●Transitions in the number of continuously employed individuals aged 60 or more

FY	Number of reemployed retirees	Number of retirees	Continuous employment rate
2014	90	106	84.9%
2015	90	118	76.3%
2016	111	124	89.5%
2017	63	84	75.0%
2018	64	100	64.0%

#### ●Reference: retirement age for employees based on date of turning 60 (up to 2021)

Age turning 60	Retirement age
2016	62
2017	63
2018	
2019	
2020	64
2021	65

## Employment of People Living with Disabilities

AGC has expanded employment opportunities for people living with disabilities. AGC has exceeded the employment rate of people with disabilities designated by law, and continues to promote understanding of this initiative throughout the company.

### ● Employment Rate of People with Disabilities

FY	Number of people with disabilities (actual number)	Employment rate
2014	110	2.10%
2015	110	2.15%
2016	112	2.17%
2017	122	2.30%
2018	127	2.28%

## The Special Subsidiary, AGC Sunsmile

AGC Sunsmile is a special subsidiary established in 2002 with a view to increasing the employment of people living with intellectual disabilities. In cooperation with relevant organizations, the company strives to provide a better work environment for employees with high motivation. Duties consist mainly of cleaning company offices, dormitories and company residences, and the business is being developed in the Keihin, Sagami and Kansai areas.

At the AGC Kansai Plant (Takasago Factory), people living with intellectual disabilities are put in charge of greening activities and janitorial work, and the factory is endeavoring to create even further opportunities. Intellectually disabled individuals are also actively engaged in janitorial work at the Chiba Plant.

## Employee Education

### Fundamental Approach

The AGC Group outlined its policy on Development and Growth in the 7 Key Principles for People, which aims at realizing progressive human resources management. The Group has established a variety of training programs, such as technology and skill training provided alongside rank-specific training. Considering that human resources are the driving force for the growth of the Group's business operations, this training further supports the growth of its employees.

equipped with the same machines and equipment used in AGC Group plants, provides trainees with practical, hands-on learning opportunities. Trainees are able to learn about processes they may not encounter in their daily work at the plant; for example, the structure of a melting furnace and troubleshooting methods relevant therein. Training is also provided to business partners to boost the standard of manufacturing excellence and personnel cultivation throughout the supply chain.

### Management Structure

The AGC Group organizes an educational system, chiefly through the human resources department, in cooperation with individual companies and personnel officers in each region. In addition, the training systems and methods are continuously reviewed and improved.



Training and Education Building



Accommodation facility at the AGC Monozukuri Training Center

### Group-wide Initiatives

#### AGC Monozukuri Training Centerr

The AGC Monozukuri Training Center is an educational facility designed to effectively cultivate AGC Group personnel. The Training Center is comprised of two areas, one for training and one for practice, and it provides training on about 80 clerical and technical topics, principally for AGC Group employees in Japan. On the practice side, technical education is designed around the concepts of "the site, the work and the conditions." This building,

### ● Number of Monozukuri Training Center Users

FY	Annual training hours (hours/person)
2016	26,345
2017	27,543
2018	29,952



### Rank-specific training

Rank-specific training in the AGC Group is targeted at new employees, employees carrying out certain roles and newly appointed managers. In order to strengthen management roles and functions, rank-specific training is provided for representatives and managers. Rank-specific training is provided for employees in Korea, China and Taiwan, as well as employees in Japan.

### Provision of online training

Since 2014, the Group has been providing employee training online as part of its “Learn anytime, anywhere” workplace-building initiative. As of 2017, nine of 82 training courses had been made available online or through videos. Through supplementation of these courses, the Group will continue to support its employees’ education.

### Promoting AGC Group Improvement & Innovation Activities

The AGC Group promotes “AGC Group Improvement & Innovation Activities” in order to raise the productivity of the entire Group. In addition to improving productivity throughout the supply chain, the Group is actively expanding the scope of activities to related departments, such as sales and marketing.

In recent years, the Group has been working to raise the likelihood of success in its business ventures by incorporating productivity-boosting measures when constructing a new business or production line.

#### Initiatives in Europe

At the Automotive Company, engineers from factories around the world periodically share best practices in web meetings and face-to-face talks, promoting the construction and development of AGC’s global standards. Particularly in Europe, the Automotive Company is promoting training and implementation of improvement activities based on the Toyota Production System.

#### Initiatives in Asia

In Asia, the Group holds seminars on improvement activities approximately five times a year at major bases in China, and nurtures improvement theme leaders at each site. Moreover, the Group is working to improve productivity using IoT tools at model factories, and is deploying the results horizontally to other plants.

### CNA : Cross-Divisional Network Activities

The AGC Group created Cross-divisional Network Activities (CNA) to enable employees possessing common skills to network.

These activities would otherwise be impossible due to employees' day-to-day work being conducted in different organizations. Objectives of this initiative include building networks between employees with common skills and honing specialist skillsets while engaging in issue resolution.

Cross-divisional Network Activities take place on various levels, from information sharing to joint research. By discussing potential roadblocks and bringing together skills and knowledge, solutions to common issues and ideas for new technology emerge. For example, collaboration between the sales and R&D departments gives the customer a role in the R&D process, allowing them to bring in viewpoints and fresh ideas that can spark new initiatives.

### Skill Map: A Unique Personnel Database

The AGC Group introduced a unique personnel database, Skill Map, in 2010. This group-wide database, in which employees are registered by their specialty, enables the Group to "see" the skills held by employees in various divisions. As of the end of 2018, approximately 8,000 employees are registered in the Skill Map in 28 technical categories and 12 sales/administrative categories. The database has been linked to effective utilization of human resources and facilitating communication.

Introducing Skill Map has enabled users to see which organization employees with certain skills belong to, facilitating strategic recruitment in accordance with the growth strategy. The database also facilitates the human resources search and "right person in the right place" personnel allocation.

## Individual Company Initiatives

### Career Development Support (AGC)

AGC has introduced the Challenging Career System to encourage employees to raise their hand and apply for the jobs they want. The system assigns appropriate people to newly launched businesses and operations that need strengthening, further invigorating the organization in the process. In addition, the Professional System and the Meister System have also been adopted in order to appropriately evaluate and manage those with highly specialized expertise or advanced technological skills.

#### Challenging Career System

An in-house voluntary recruitment system, under which employees apply to job offers publicly given by in-house organizations once a month (applied to a total of 195 employees)  
An in-house "free agent" system, under which employees register the jobs that they wish to perform at other departments, and undergo screening individually to get the jobs (applied to a total of 103 employees)

#### Professional System

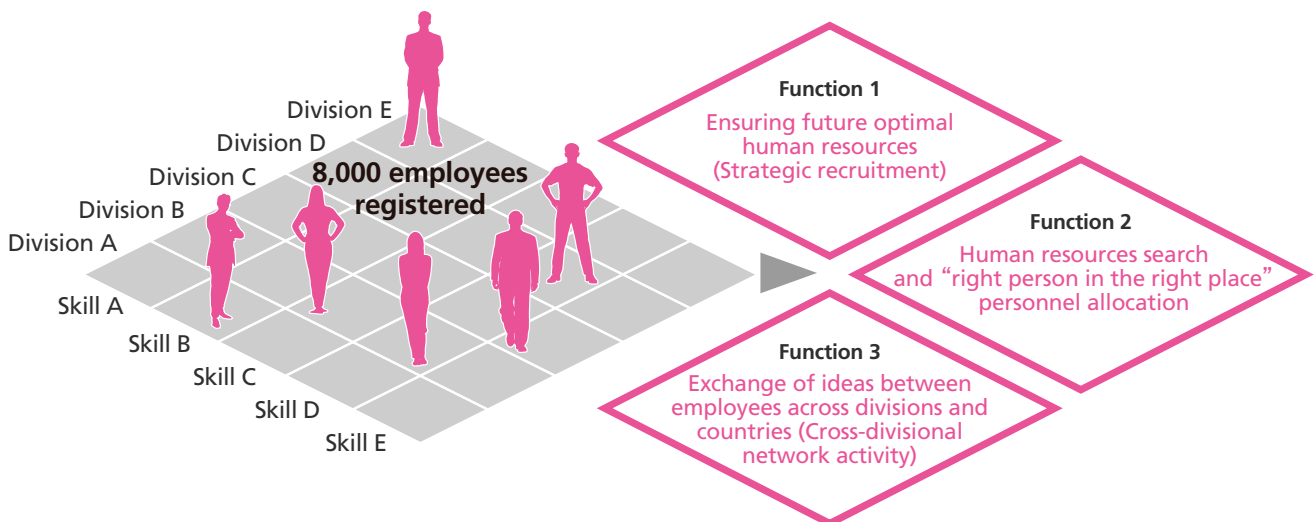
A system under which managers who have extremely high practical knowledge, skills or behavioral traits regarding technological skills and expertise vital to the AGC Group, and can exercise them to great effect, are certified as professionals, evaluated and treated appropriately. (51 managers)

#### Meister System

A system under which engineers who have outstanding technical skills and knowledge vital to the continuous development of the AGC Group, exercise them to great effect, and are responsible for the training and guidance of their successors are certified, evaluated and treated appropriately (applied to 6 employees)

**Note** Current numbers as of end of December 2018.  
The number listed for "Challenging Career System" is the total number of users since 1999

### ●The Three Functions of Skill Map



# Occupational Health & Safety

## Fundamental Approach

The AGC Group has formulated the AGC Group Basic Occupational Health & Safety Policy and promotes activities to create a safe and healthy work environment under the occupational health and safety policy of “No production without safety.”

### AGC Group Basic Occupational Health & Safety Policy

(Established on February 9, 2001 and revised on March 29, 2013)

#### Basic Policy

The AGC Group will manage its Occupational Health and Safety (hereinafter “OH & S”) under the policy of “No Production without Safety” and all managers will ensure that the OH & S policy should be clearly understood and permeated throughout the Group and that all of the employees should be actively involved in the promotion of OH & S activities.

#### Guidelines for Occupational Health and Safety Activities

We will actively implement OH & S activities by addressing any possible issues on occupational accidents and illnesses to achieve continual improvement in our OH & S performance, based on the following guidelines.

We will enhance the level of our Risk Assessments to promote effective use of our OHSMS.

We will continue our conventional on-site safety activities without making them mere repetitive routine.

Managers will treat their subordinates like a family member and ensure safety at workplaces.

We will promote intrinsic safety of equipment, and look for continual improvement in the workplace environment.

We will implement OH & S activities as a part of production line activities. The departments in charge of OH & S will provide necessary support for line management.

We will comply with OH & S related laws and requirements.

We will encourage proactive employee participation in all OH & S activities through open, honest and fair interactions and communication at workplaces.

## Management Structure

The AGC Group is pushing ahead with health and safety activities based on the concept of an occupational health and safety management system (OHSMS). Individual OHSMS-relevant policies and measures are formulated within each division, and their progress is regularly announced and discussed at CSR Committee meetings.

In addition to managing individual plant activities based on OHSMS certifications, each plant also takes steps to improve health and safety management levels through internal audits by the auditing division and each business division. The Group also holds a regular Global Occupational Health and Safety Symposium. Health and safety supervisors from various countries and regions participate, and best practices and horizontal development are disseminated to each manufacturing plant.

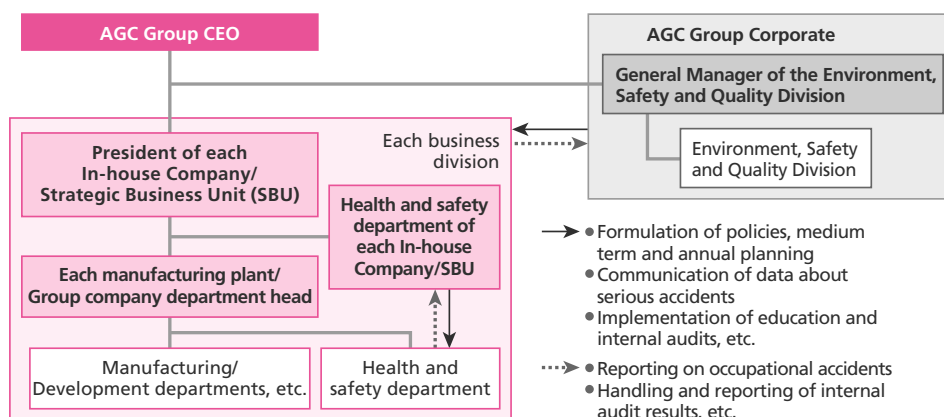
Starting in 2013, the EHSQ Management System was created to facilitate the integrated management of EHSQ (Environment, Occupational Health & Safety, and Quality) efforts across the Group.

### ● Number of Plants Obtaining Third-Party Certification for OHSMS

(As of the end of December 2018)

Coverage	Number of certified plants
AGC	1
Group companies in Japan	5
Group companies in Asia other than Japan	12
Group companies in Europe	50
Group companies in North America	1
<b>Total</b>	<b>69</b>

### ● The AGC Group’s Health and Safety Management Initiatives



## Group-wide Initiatives

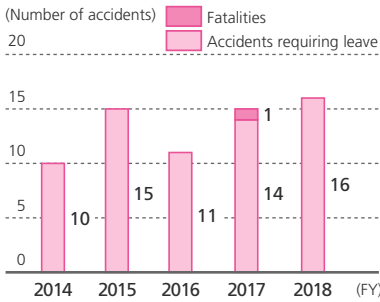
### Developing a System to Collect Global Accident Data

The AGC Group has developed a system for collecting the standardized occupational accident data of the Group globally, including its business partners at business sites, and sharing this information laterally.

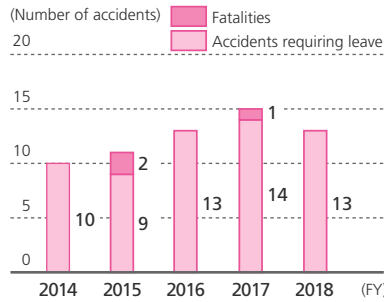
Due to these initiatives, over the long-term incidents have trended downward. In the past few years, the number of occupational accidents has leveled off, although some areas have seen an increase.

#### ● Number of Occupational Accidents (AGC Group including Business Partners)

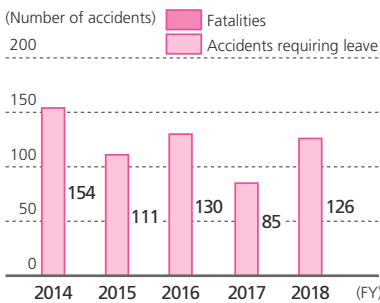
##### Japan



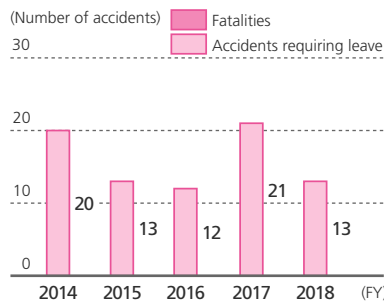
##### Asia other than Japan



##### Europe



##### The Americas



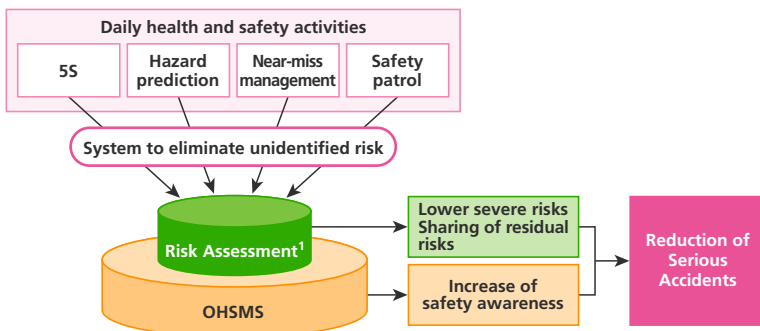
**Note** The assessment criteria for accidents requiring leave differ among Asia including Japan, Europe and The Americas, which disables the simple comparison of the numbers of occupational accidents among each region.

#### ● Occupational Accidents in 2018 (includes AGC Group in Japan and Asia / business partners)

Type	Japan		Asia other than Japan	Total
	Major sites	Others		
Death	0 (1)	0 (0)	0 (1)	0 (2)
Leave of Absence	10 (6)	6 (8)	13 (7)	29 (21)
No Leave of Absence	7 (11)	1 (2)	9 (8)	17 (21)
Minor injuries	28 (41)	—	—	28 (41)
<b>Total</b>	<b>45 (59)</b>	<b>7 (10)</b>	<b>22 (16)</b>	<b>74 (71)</b>

**Note** The figures in parentheses represent the numbers of occupational accidents in 2017.

#### ● The AGC Group's Health and Safety Management Initiatives



**Note** Activities to comprehensively identify risks associated with facilities and work processes, to evaluate the risk levels, and to implement safety measures, prioritizing serious risks

### Promoting safety activity-related information sharing that eclipses national and departmental boundaries (Architectural and Industrial Glass Company/ Automotive Company)

In the AGC Group (Asia), meetings are held for employees in charge of safety from all relevant countries. Issues requiring reform are shared through activities that highlight the Group's stance on health, safety and environment, and each participating country aspires to improve their safety initiatives through these meetings.



Meetings for employees in charge of safety include healthy debate

### Continuing to Advance Risk Assessment

The AGC Group is taking steps to improve its risk assessment with an initiative to reduce the risk of occupational accidents.

The AGC Group (Japan) trains managers and supervisors, and implements routine training for employees who conduct risk assessment at manufacturing sites. Safety promotion activities have been implemented since 2009. The Group selects Core Safety Facilitators from among those in the development, manufacturing and facility divisions at each plant and promotes safety through various activities, intensive education for risk assessment and daily health and safety activities<sup>1</sup>. In 2018, 26 employees took part in the training, bringing the total number of trained employees to 285.

The AGC Group (Asia) also selects managers and/or engineers from various countries and regions as Safety Key Persons, and invites them to Japan for a week of training built on a fundamental overview of risk assessment and international standards for machinery safety.



Participants in the training for Safety Key Persons

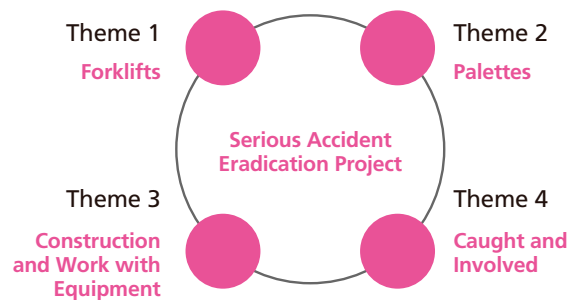
<sup>1</sup> Health and safety conventional activities such as the 5S (seiri [sort], seiton [set in order], seiso [shine], seiketsu [standardize] and shitsuke [sustain]), risk prediction, near-miss management (hiyari-hatto) and safety patrols.

### Initiatives to Eradicate Serious Accidents

The AGC Group founded its Serious Accident Eradication Project from 2012 to 2013. Through an innovative approach, the AGC Group carried out group-wide risk-prevention measures across four categories of occupational accidents posing particularly high risks throughout the Group, as well as four categories related to environmental and industrial safety.

In fiscal 2018, the Group steadily continued these activities to ensure the measures take root at Group sites.

### ● Serious Accident Eradication Project (Eradication of Industrial Accidents)



### Promoting Machinery Safety by Introducing Safe Manufacturing Machines

Reducing risks associated with manufacturing machinery is essential for realizing safe production workplaces. Building on efforts to minimize machine-related risk through established risk assessment methods, the Group is working to ensure the installation of safer manufacturing machinery through additional risk assessment protocols at the design stage.

In Europe, risk-reduced facilities were introduced based on the local law-enforced system of CE marking<sup>1</sup>. Additionally, the crucial role of risk assessment by facility users is stipulated in the EU framework.

In Japan and the rest of Asia, the Group encourages all managers responsible for safety to obtain qualifications as Safety Assessors and Safety Basic Assessors under a Certification System<sup>2</sup>, so they have a full understanding of international safety standards when adopting plans and machinery.

The number of employees with this certification rose further in 2018, with a particularly large increase in the number of employees from Asian Group companies obtaining Safety Basic Assessor Certification, totaling over 100 individuals in Thailand, Indonesia, China and elsewhere.

The number of employees with safety assessor certification in Japan has also risen steadily. The certified individuals are assigned tasks as risk assessors and inspectors.



Training for Safety Basic Assessor Certification (Thailand)

<sup>1</sup> Products with the CE mark certifies that they meet the standards set by all member states of the European Union.

<sup>2</sup> The safety assessor certification is awarded for understanding and practical skills related to machinery safety. Based on international safety standards and developed by Nippon Electric Control Equipment Industries Association and other organizations, the certification is verified by a third party. Three levels of certification are available: Safety Lead Assessor, Safety Assessor and Safety Sub-Assessor. The certification for the assessment of basic safety, which targets operators of machinery and tests fundamental knowledge of machinery safety, is verified by a third party.

### Improving the Level of Safety Awareness

The AGC Group is implementing stratified education to raise safety awareness.

The Human Error Prevention Manual, amongst others, is a proprietary textbook that has been translated into multiple languages for use in training courses at each plant.

The Group also conducts practical training for safety patrols in Asia, including Japan, to give workers the skills needed to identify latent but serious workplace risks while on patrol. In the training, participants conduct a safety patrol along a mock production line with more than 110 flaws. This first-hand experience in machinery safety builds skill in identifying the risks caused by unsafe situations in facilities.

Since 2012, this training has been conducted for safety managers throughout Japan, and several safety managers from Group companies outside Japan have also received the training. A safety patrol facility has been partially deployed at Asahimas Flat Glass in Indonesia, mainly focused on providing the training for safety managers in the region.

Furthermore, a meeting to announce improvement initiatives is held every year in autumn by the Purchase & Logistics Division in AGC and AGC Logistics (AGL). At the meeting, improvements to safety and quality regarding distribution of goods by Business Partners (BP) and AGL are announced. To promote a common culture of safety between AGL and the BPs, a full circuit inspection and "finger-pointing and call" safety check are carried out at each BP company, and around their trucks.



Practical safety patrol training

### Implementing Hazard Simulation Training

The AGC Group is putting into effect "Safety Sensory Education" that simulates occupational accidents, such as getting caught in machinery or receiving an electrical shock, with the aim of enhancing safety awareness and eliminating unsafe behavior leading to occupational accidents.

Currently, the AGC Group is introducing several types of safety sensory facilities at the Monozukuri Training Center and at the sites of each Group company in Asia, including Japan. It is also promoting the training of instructors who can lead "Safety Sensory Education."



Leak simulation of chemical hazardous materials (Indonesia)



Simulation of how to hold glass safely (Japan)

## AGC Initiatives

### Labor Union Participation in Health and Safety Measures (AGC)

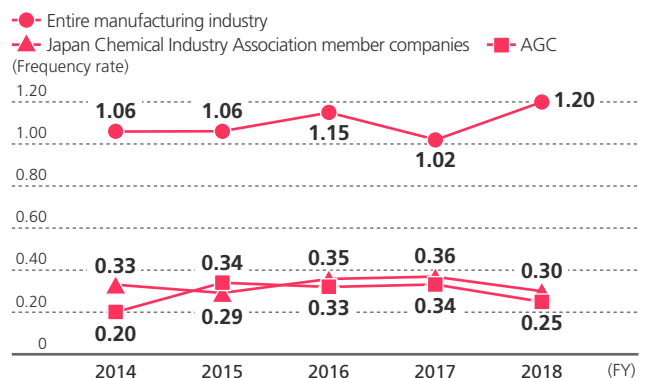
At AGC, safety and health committees are established at each site based on collective labor agreements, and labor unions' opinions regarding safety and health are considered. Business partners working within the site also participate in the committee.

Safety officers and employee representatives are given regular opportunities to exchange opinions, which are then reflected into various safety and health measures.

#### ●Trend in the Severity Rate of Accidents Requiring Leave (AGC including Business Partners)

	2017	2018
Entire manufacturing industry	0.08	0.10
Japan Chemical Industry association members	0.035	0.026
AGC	0.385	0.003

#### ●Trend in Frequency Rate for Accidents Requiring Leave (AGC including Business Partners)





## Creating a Comfortable Workplace

### Fundamental Approach

Through occupational health and safety activities, the AGC Group promotes the creation of a pleasant workplace environment based on its Basic Occupational Health & Safety Policy.

To clarify its position on employee health management, the Group has established the AGC Health Management Policy, which details its vision for the health management of all employees.

#### AGC Health Management Policy

(Established on March 1, 2007)

The AGC Group has established the following health management policy to be followed by its employees in conducting their business operations, to continuously create value for the world under the Group Vision **“Look Beyond”**

##### Health consciousness

Employees represent one of the most important assets for the AGC Group, and health is one of the most important elements of the daily lives of employees.

##### Corporate support for employee health

The AGC Group will actively implement measures to maintain and promote the physical and mental health of its employees, thereby supporting them in driving the growth of the Group by fully displaying their individual abilities, and in striving to lead meaningful lives.

##### Self-discipline by employees

Employees themselves must be aware of the importance of their health, and they must maintain and promote their health through self-discipline, taking responsibility for their own health.

**Note** The AGC Group plans to extend this Health Management Policy from AGC to Group companies in and outside of Japan in the future.

### Management Structure

#### Occupational Health Management through Divisional Cooperation

In accordance with its Basic Occupational Health & Safety Policy and Health Management Policy, the AGC Group works with related divisions on measures to continue providing a positive workplace environment.

### AGC Group Initiatives

#### Establishing a Chemical Substance Management System

According to the Strategic Approach to International Chemicals Management (SAICM) established in 2006, any country manufacturing or using chemical substances is required to minimize the adverse effects of these process on humans and the environment by 2020. In Japan, this includes chemical substance risk assessment in accordance with revisions to Japan’s Industrial

Safety and Health Law. Other countries are also required to build on and expand their chemical substance management systems. The AGC Group is carrying out appropriate activities, namely managing chemical substances used in each worksite, appointing experienced chemical substance managers and conducting appropriate risk assessments, all in order to improve chemical substance management levels.

For risk assessments of chemical substances, the Group created its own standardized assessment method, and has made it known group-wide by conducting training at production sites and other worksites. Based on the Globally Harmonized System of Classification and Labeling of Chemicals, the Group’s assessment method is a simple and useful way to assess the risks, danger or toxicity of chemical substances, and can be applied in any country worldwide.



Chemical Substance Risk Assessment training

### Initiatives at Individual Companies

#### Strengthening the Mental Health Care Initiative (AGC)

AGC has been enhancing its mental health care measures for employees in line with its Health Management Policy. Specifically, the Group is proactively continuing education for each level of employees and management.

Due to revisions to the Industrial Safety and Health Law, there are also plans to introduce stress checks beginning in 2016. In cooperation with the current employee support program, the Group is promoting initiatives to prevent employee mental health issues before they occur.

#### Major Mental Health Care Measures Taken at AGC

##### 1. Employee support program

Under the program, employees and their family can consult external experts (counselors) about their mental problems in person or by phone at no charge. The consultation details are kept strictly confidential.

##### 2. Various training

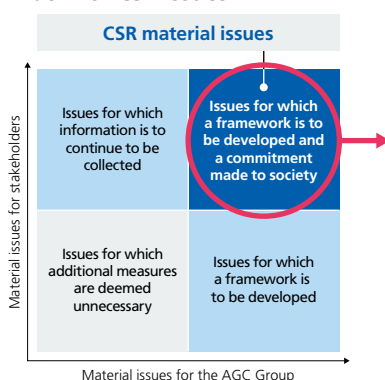
As preventative measures for mental problems, training regarding mental healthcare in the workplace for managers—who play a vital role in the mental healthcare of employees—is implemented along with training that provides the necessary knowledge and information so that employees can deepen their understanding of mental healthcare, in order to encourage independent mental health management.

# Society

In 2011, the AGC Group began CSR monitoring based on ISO 26000. In CSR monitoring, issues defined in ISO 26000 are classified into four categories on the basis of their importance to either the AGC Group or its stakeholders. From these categories, a CSR Matrix is created, and issues judged important to both sides are recognized as CSR Material Issues. At present, there are eleven established CSR Material Issues, and their targets and current progress are provided on the following page.

**Note** Core issues for ISO 26000 regarding society: “Fair Operating Environment” and “Community”

**Matrix of CSR Issues**



**CSR Material Issues relating to the AGC Group**

ISO 26000 Items	Issues	AGC Group's material issues
Core subjects		
Organizational Governance	Decision-making processes and structures	<b>Organizational governance</b>
Human Rights and Labor Practices	Conditions of work and social protection	<b>Fair working conditions</b>
	Health and safety at work	<b>Occupational health &amp; safety</b>
The Environment	Human development and training in the workplace	<b>Human resource development</b>
	Prevention of pollution	<b>Pollution prevention</b>
	Sustainable resource use	<b>Sustainable use of resources</b>
Fair Operating Practices	Climate change mitigation and adaptation	<b>Climate change initiatives</b>
	Anti-corruption	<b>Anti-corruption</b>
Consumer Issues	Fair competition	<b>Compliance with antitrust laws</b>
	Promoting social responsibility in the value chain	<b>Social responsibility in the supply chain</b>
	Protecting consumers' health and safety	<b>Product safety</b>

## CSR Material Issues of the AGC Group Corresponding to Fair Operating Practices

### Anti-corruption

#### Reasons for Selection

With anti-corruption given as one of the United Nations Global Compact's ten principles, European and American laws and regulations related to anti-corruption are being strengthened, the exposure of corruption is advancing in fast-growing countries, and society's interest in anti-corruption measures is rising. The AGC Group operates in approximately 30 countries and regions and conducts business on a global scale, thus it views corruption as a major risk.

#### ISO 26000 related actions and expectations

- Identify the risks of corruption and implement and maintain policies and practices that counter corruption
- Provide commitment, encouragement and oversight for policy implementation regarding anti-corruption by top management
- Raise awareness of corruption and preventative measures among employees, representatives, contractors and suppliers
- Establish and maintain an effective anti-corruption system
- Adopt mechanisms to report and follow up on information regarding violations
- Promote the introduction of anti-corruption practices in the value chain

### Fair competition

#### Reasons for Selection

In recent years many countries, including fast-growing nations, have strengthened their regulations and enforcement regarding antitrust laws, and there is strong demand for corporate compliance. Due to the features of its business (a large share or an oligopolistic industry) and having received orders of payment for surcharges from the authorities concerned in the past, the AGC Group is aware that antitrust law violations pose a major risk to its business activities.

#### ISO 26000 related actions and expectations

- Conduct activities in a manner consistent with competition laws and regulations, and cooperate with the appropriate authorities
- Establish procedures to prevent engaging in anti-competitive behavior
- Train employees on the importance of competition legislation and fair competition

### Promoting social responsibility in the value chain

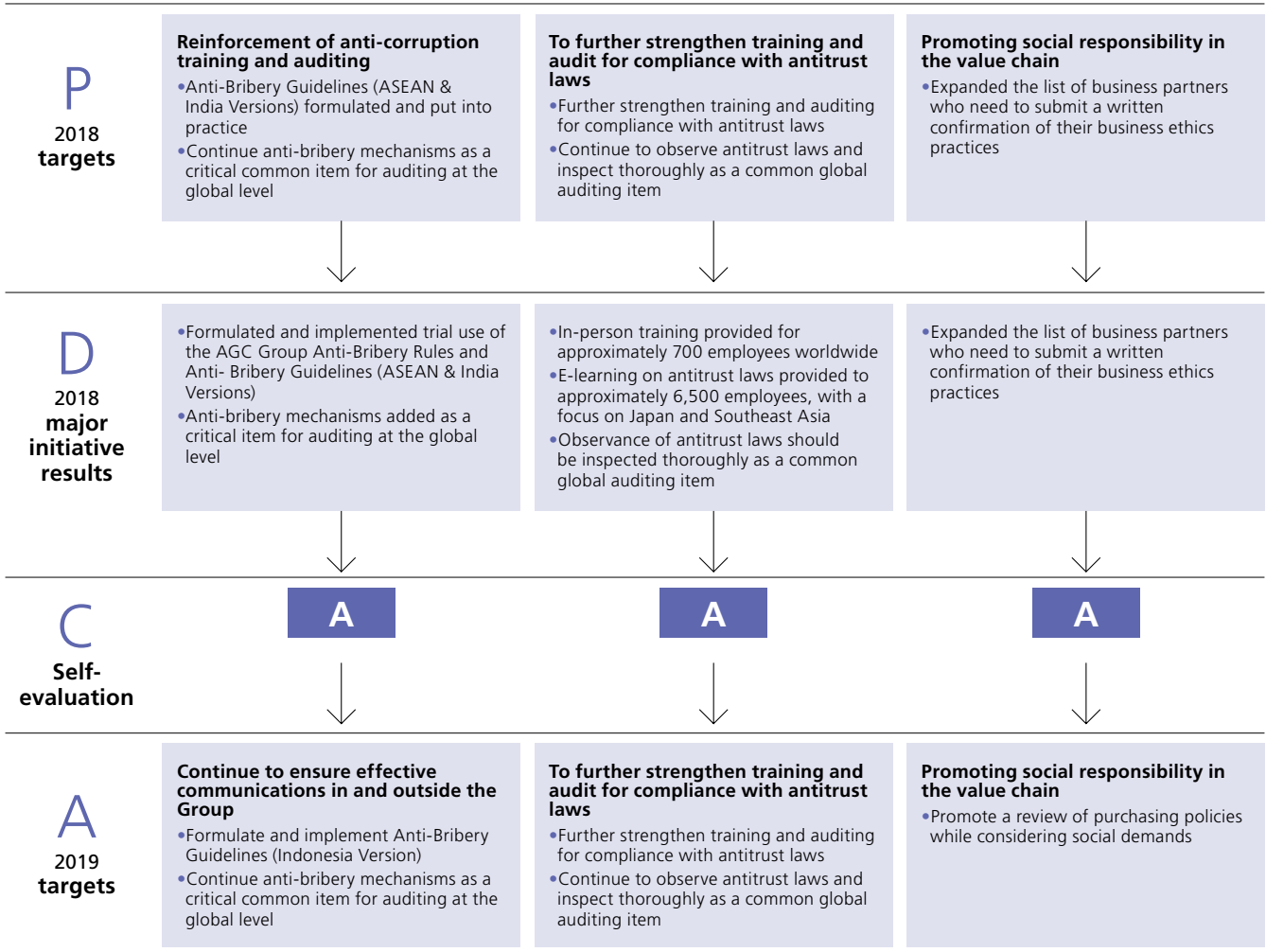
#### Reasons for Selection

Corporations look to ensure compliance with laws and regulations throughout their entire supply chain as they expand worldwide. The Group recognizes the need to promote certain activities across its supply chain in order to resolve social issues stemming from human rights, labor practices and the environment.

#### ISO 26000 related actions and expectations

- Integrate ethical, social, environmental and gender equality criteria and health and safety in its purchasing, distribution and contracting policies
- Carry out appropriate due diligence and monitoring of the organizations with which it has relationships

## Results of Activities Relating to CSR Material Issues in 2018



Criteria for Self-evaluation **A:** Satisfactory level, in which the intended target has been achieved  
**B:** Almost satisfactory level, in which a part of the intended target has not yet been achieved and some issues still remain  
**C:** Unsatisfactory level, in which the intended target has not been achieved

## Fair Transactions

### Fundamental Approach

In its Charter of Corporate Behavior, the AGC Group stipulates that it will conduct appropriate transactions and otherwise conduct its business in accordance with the principle of fair competition and all applicable laws and regulations. The Group also strives to maintain a sound relationship with politicians, the government, other organizations and individuals and firmly confront antisocial forces, aiming to conduct fair transactions.

### Management Structure

Since 2006, the AGC Group has been implementing a global legal management system and strengthening monthly reporting and monitoring on disputes faced by the Group, in order to grasp their status quickly and deal with each case appropriately.

With regard to the disputes faced by the Group, information is gathered at the Group General Counsel level then is promptly reported to the top management and Group CEO. Moreover, periodic reports are given to the Board of Directors on the progress of the disputes and the status of the global legal system.

In addition, the AGC Group is working to reduce legal risk by hosting legal affairs meetings with Regional General Counsels and cooperating with related in-house divisions.

### Group-wide Initiatives

#### Compliance with Antitrust Laws

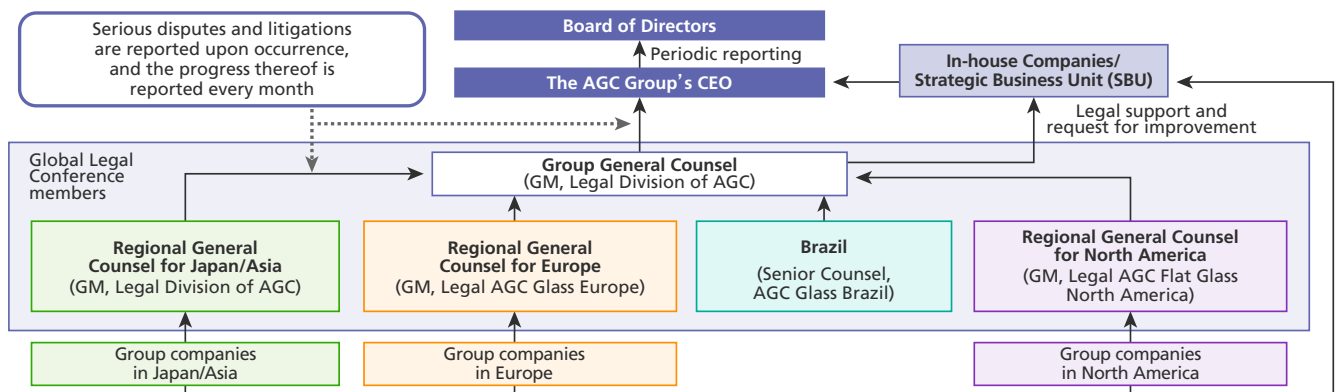
In addition to the Group Code of Conduct that summarizes matters all employees must comply with in their work, the AGC Group has formulated and implemented global guidelines for compliance with antitrust laws. The Guidelines state that, when meeting with a competitor company, (1) the legality of the purpose of the meeting shall be fully examined and participation shall be allowed only on an extremely limited basis, (2) advance permission to attend must be obtained from a supervisor and (3) following attendance, meeting minutes must be prepared.

Moreover, the Group is promoting face-to-face and e-learning education regarding compliance with antitrust laws in each region and organization. One of the global common priority audit items for internal audit is “Organization and procedure for compliance with antitrust law.” Audits of the state of compliance with these global guidelines are also implemented.

#### • Status of Implementing Measures for Complying with Antitrust Laws (AGC Group)

FY	Number of participants in e-learning	Number of internal audits
2018	Approx. 6,500	52 (Group companies and divisions)

#### • Global Legal Management System



## Preventative Measures for Anti-Corruption

The AGC Group Code of Conduct stipulates that the AGC Group maintains sound relationships with government agencies and other responsible organizations and individuals, and the Group works to comply with each country and region's laws and regulations regarding anti-corruption.

In addition, with the prevention of bribery and other corrupt practices being strengthened worldwide, the AGC Group is promoting relevant education for its employees. In addition to the AGC Group Anti-Bribery Rules for public officers, the Group established and put procedures, concepts and judgment criteria into operation for high-risk countries and regions.

## Compliance with Contracting Requirements and the Worker Dispatching Act

The AGC Group conducts business in collaboration with business partners involving contracting companies and temporary workers.

In addition, the Group annually conducts a survey on compliance with contracting requirements at AGC production plants and major Group companies in Japan, and has confirmed that compliance-related rules were observed in 2018. The Group will continue to make efforts to disseminate and thoroughly comply with contract requirements and comply with the revised Worker Dispatching Act.

## Compliance with the Act against Delay in Payment of Subcontract Proceeds, Etc., to Subcontractors

The AGC Group continually educates staff and managers to ensure compliance with the Act against Delay in Payment of Subcontract

Proceeds, etc., to Subcontractors (hereafter "the Act").

Since 2009, the Group has conducted e-learning initiatives for employees who work with transactions affected by "the Act," including employees located in Group companies in Japan.

In 2018, the Group conducted e-learning about the Act for approximately 7,100 employees. Additionally, in November, a liaison conference was held by approximately 20 subcontracting and purchasing management supervisors from each business division.

## Prevention of Insider Trading

To protect its shareholders and investors, and ensure the fairness and reliability of securities markets, the AGC Group is making every effort to spread awareness of the prevention of insider trading.

In addition to clearly stating in the AGC Group Code of Conduct that insider trading is forbidden, systems intended to prevent it are stipulated in the Information Control Council Establishment Guidelines and the Insider Trading Prevention and Control Rules.

Furthermore, regular opportunities to learn about the AGC Group Code of Conduct are provided and information regarding the prevention of insider trading is thoroughly disseminated. Understanding of this information is reaffirmed when oaths are taken. Special training is implemented for directors, executive managers and personnel in specific posts (corporate planning, accounting, finance, Corporate Communications, IR, etc.)

Furthermore, if an AGC Group director or employee has concerns as to whether buying or selling stock could fall under insider trading, the Information Control Council prepares a system for review and works to prevent any instance of insider trading.

## Respect for Intellectual Property Rights

### Fundamental Approach

As stipulated in the AGC Group Charter of Corporate Behavior, the AGC Group properly manages and protects the company's information, intellectual property and assets, and strives to respect the intellectual property rights of others, including customers and business partners.

### Management Structure

The AGC Group considers intellectual property rights such as patents, utility model rights, trademark rights, design rights, copyrights as valuable intangible assets and the Intellectual Property Division takes the lead in protecting and enforcing these rights.

### Group-wide Initiatives

#### Protection and utilization of intellectual property rights created within the Group

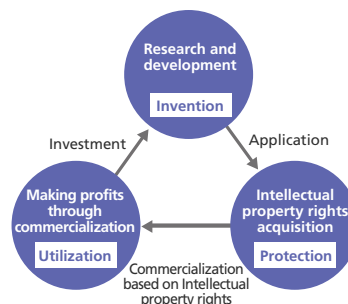
In addition to creating intellectual property rights as a vital business strategy resource, the Group works to protect and increase it and promotes the use of intellectual property to

heighten its competitive advantage.

For example, the Group globally files IP applications for inventions created at development sites in each country and works to acquire rights adapted to its business activities. Since the procedures for the protection of intellectual property rights differ by country, rights acquisition is conducted in cooperation with local patent attorney offices and Group companies. The Group also takes strict action on any infringements of its intellectual property rights by other parties in compliance with the local laws and regulations of each country.

In addition, in order to use the intellectual property rights held by the Group to promote intellectual property strategy linked to the business and brand strategies of each business division, intellectual property conferences attended by the heads of each business division are held regularly in each division.

#### ● Cycle of Intellectual Property Creation



## Prevention of infringement of the intellectual property of other parties

The AGC Group is creating a framework, including employee education, to prevent infringement on the intellectual property rights of others. The AGC Group continuously monitors the intellectual property rights of others and checks to make sure it will not be violating the rights of others before new products are released or new business operations commence.

## Employee Training Regarding Intellectual Property Rights

The AGC Group emphasizes employee training regarding intellectual property rights from the dual perspective of adequately protecting its own rights and respecting the rights of others.

In Japan, aside from hosting intellectual property training for new employees, the Group carries out intellectual property training and promotes intellectual property education for each

in-house company, technical division and research division as necessary. Additionally, intellectual property training is also implemented at overseas Group companies, tailored to suit local conditions.

## Initiatives at Individual Companies

### Rewarding the Inventions of Employees

AGC has a substantial reward system in place for outstanding employee inventions. Similar systems are being prepared at Group companies in Japan.

In addition, reward systems are being prepared overseas based on legal framework in each country and region, taking each locale's present condition into consideration.

## Maintaining Information Security

### Fundamental Approach

Based on ISO 27000, the international standard for information security management systems, the AGC Group established an Information Security Policy. Based on this policy, which is shared across the entire Group, the Group appropriately stores, uses and manages informational assets and protects personal information.

### Management Structure

Based on the Information Security Policy, the AGC Group has formulated standards and guidelines based on regional circumstances in Europe, North America, and Asia, including Japan.

In addition, the Group has established a system to minimize the impact of any loss, theft, leak, etc. of information assets in accordance with the AGC Group Crisis Management Guidelines.

### Group-wide Initiatives

#### Information security education / self-checking

In order to improve the level of information security, the AGC Group regularly conducts education and information security self-checks by e-learning and other means on a global basis, thereby improving the situation regarding information security.

In Asia, including Japan the Group has created textbooks on information security policy in eight local languages. The Group also shares multimedia teaching materials including videos and e-learning materials through the company intranet so they may be freely used by Group employees.

In addition, meetings are held regularly for those in charge of information security to improve on the self-check results of the previous year and provide necessary education.

#### ●Self-Checks on Information Security: 2018

AGC	Group companies in Japan	Group companies in Asia other than Japan	Group companies in Europe	Group companies in North America
6,800	4,400	6,100	5,000	900

### Internal audits on information security

The AGC Group has selected "measures for preventing leaks of important confidential information" as one of the shared global priority items for internal audits (see page 20). To prevent information leakage, the Group audits the information security promotion system and regularly inspects and reviews the Group's internal network, sites of connection with the internet and the operational status of important IT infrastructure.

## Initiatives at Individual Companies

### Information Security Training

Information security training is implemented at AGC as part of the training for new employees and mid-career workers.



## Supply Chain

### Fundamental Approach

As described in the AGC Group Charter of Corporate Behavior, the AGC Group strives to establish mutually beneficial and appropriate relationships with business partners, ensuring that the principles of compliance with the Charter are in line with the fundamental stance of the AGC Group. By so doing, the Group seeks to promote good supply chain management.

### Management Structure

The Purchase & Logistics Division plays the main role in continuing the stable procurement of raw materials and other materials. It also conducts initiatives to solve social issues involving human rights, labor practices or the environment with business partners and the rest of the supply chain. The Group has established the AGC Group Purchasing Policy, which clearly states the Group's emphasis on corporate social responsibility (CSR) and the Group asks business partners to understand and cooperate with this policy.

### Group-wide Initiatives

#### The Ombudsman System for Purchasing

The AGC Group introduced the Ombudsman System for Purchasing in 2003 to ensure transparency in purchasing transactions and to prevent misconduct.

This system is a mechanism that allows business partners to point out, via a sealed letter, issues related to the transactions of AGC group employees to the head of the Purchase & Logistics Division, who is responsible for purchasing transactions. Issues raised are treated in strict confidence and resolved expediently.

#### Regular review of the content of contracts

To promote supply chain management, the AGC Group uses the most up-to-date contract with relevant CSR clauses when making new contracts or renewing contracts with business partners.

### AGC Group Purchasing Policy

Established in 2009

AGC Group values the idea of the Group Vision **"Look Beyond"** and the "AGC Group Charter of Corporate Behavior" (see page 7) and will regulate our performances on purchasing which are explicitly stated in the following "AGC Group Purchasing Policy".

#### 1. Basic Purchasing Principle

1. Fair & Equitable trade  
Our procurement policy is to consistently search for innovative technologies, product and services with a "Fair" and "Equitable" manner globally.
2. Compliance to related Laws & Regulations, and Pro-environment behavior  
AGC Group will comply with the applicable laws and regulations of each country where our procurement takes place, and give due regard to safety and environment.
3. Partnership  
AGC Group will establish a long-term, mutual prosperous partnership, based on our shared vision, to produce a better product with our business partners. To this end, we shall endeavor to keep close communication with our business partners to build and enhance our trusting relationship.
4. Protection of information, intellectual property and other assets  
AGC Group will properly manage and protect the proprietary information, intellectual property and assets of our business partners while procuring goods and services.

#### 2. Criteria for Selecting Business Partners

- AGC Group will apply key criteria to evaluate and select business partners, as follows.
1. Sound management, Steady supply and Flexibility to match with the fluctuating demand.
  2. Appropriate Quality, Pricing, Delivery date punctuality and technical service level.

#### 3. Expectation of Business Partners

The AGC Group strives to be a company trusted by all its stakeholders, a company that meets the expectations of the world business community to grow and develop responsibility, and a company that significantly contributes to a healthier global society.

Essentially, CSR activities are performed on voluntary basis initiated by each individual company. However, for the AGC group, to pursue the CSR policy, it is imperative for all the supply-chain linked companies to pursue their individual CSR activities as well. Accordingly, to enable us to jointly work with our business partners, we kindly ask our partners to understand our policy and to cooperate.

The factors related with our Business Partners are,

1. Concentrate to supply products and services with good quality, considering Safety & Environment and Compliance to Laws & Regulations of each country.
2. Secure and proper managing of Proprietary information and Intellectual property.
3. Not to be engaged to forced labor or child labor and never tolerate infringements of human rights.
4. Make efforts to environment preservation and ensuring safety and security.
5. Maintain adequate level of occupational health and safety.

## Implementing CSR Procurement Surveys

The AGC Group regularly conducts CSR procurement surveys. To grasp the implementation status of CSR activities at its business partners, the Group has created Group-wide questionnaires and guidelines used to confirm the activities' progress.

[Homepage link: The AGC Group Guide for CSR Implementation Survey](#)

## Educational support for business partners

The AGC Group conducts its business in cooperation with a large number of business partners, and implements a range of measures with the entire supply chain.

### Policy Briefing for Business Partners Hosted

Since 1997, the AGC Group has held briefing sessions for its business partners to deepen communications with its partners and expand and unify its business activities across the supply chain.

In 2019, around 270 business partners from 140 companies in various industries in Japan and overseas attended the session. Business partners were presented with a letter of appreciation for their ongoing cooperation and the AGC Group CEO gave a presentation on the Group's mid-term management plan. Following the meeting, a lively exchange of views took place between the business partners, AGC Group executives and AGC Group division heads.



Business partners who were presented the CEO award

## Promoting Green Procurement

In 2005, the Group formulated the AGC Group Integrated Green Procurement Guidelines, which provides a common approach for all business divisions. In accordance with these guidelines, green procurement guidelines for each business division were created to facilitate green procurement of raw materials and other materials suited to each business.

[Homepage link: AGC Group Integrated Green Procurement Guidelines](#)

## Initiatives Related to Conflict Minerals

Taking the conflict minerals issue as an important CSR issue, the AGC Group improves transparency in the supply chain together with its business partners and ensures responsible mineral sourcing practices. By so doing, the AGC Group fulfills its social responsibility as a global enterprise.

With the passage of the financial reform bill in the United States in July 2010, targeted companies are now obligated to disclose use of designated minerals (so-called conflict minerals) mined in the Democratic Republic of the Congo and surrounding countries. For responsible sourcing, the AGC Group will take appropriate measures to work with its business partners in the event that there are concerns that any conflict minerals mined in the designated areas assist militant groups.

## Hosting CSR workshops

AGC hosts CSR workshops for major business partners every other month. It also promotes sharing of information on each company's CSR activities, inspections of outstanding plants and hosts lectures twice a year.

The Group also prepares various training programs for its business partners, with a view to promoting manufacturing and human resource development throughout the supply chain.

## Assessing Business Partners' Satisfaction with the AGC Group through an Annual Survey

Since 2008, AGC has been conducting an annual survey of its major business partners to assess the level of satisfaction they have in their relationships with the AGC Group. The purpose of the survey is to build relationships of trust with these business partners and create a mutually beneficial environment for producing better products.

The anonymity of the survey is guaranteed so that respondents can feel comfortable in answering questions candidly and honestly. About 200 business partners have been surveyed each year, and the overall results were shared with business partners who responded to the survey and relevant personnel at AGC.



The survey sent to business partners

## Social Contribution Activities

### AGC Group Social Contribution Basic Policy

Under the three pillars of the AGC Group Social Contribution Basic Policy—(1) Support for the next generation, (2) Harmony with local communities and (3) Natural environment conservation—the AGC Group carries out social contribution activities in over 20 countries and regions throughout Japan/Asia, Americas and Europe.

Moving forward, the Group will continue to actively promote social contribution for its diverse stakeholders and conduct activities that lead to the resolution of social issues.

#### ● Total Financial Expenditure on Social Contribution Activities (AGC Group)

FY	Amount
2015	437 million yen
2016	541 million yen
2017	643 million yen
2018	543 million yen

#### ● Total number of Employee Participation in Social Contribution Activities (AGC Group)

FY	Number of Employees
2017	30,593
2018	20,332

### AGC Group Social Contribution Basic Policy

(Established on February 10, 2010)

In its AGC Group Charter of Corporate Behavior, the AGC Group declares it will “strive to be a trusted corporate citizen, fulfilling its responsibilities to the communities in which it does business.” To achieve this, we conduct social contribution activities in three priority areas.

#### Priority areas

1. Support for the next generation  
We, as a creator of future value, support the development of children, who will carry the future, helping them to live out their dreams.
2. Harmony with local communities  
We, as a member of the communities in which we operate, contribute to their sustainable development.
3. Natural environment conservation  
We, as a global enterprise, contribute to the solution of global environmental problems.

#### ● Total Expenditures by Field of Emphasis: 2018 (AGC Group)

Category	Amount	Rate
Support for the next generation	290 million yen	53%
Harmony with local communities	144 million yen	26%
Natural environment conservation	56 million yen	10%
Others	52 million yen	9%

#### ● Expenditures by Use: 2018 Results (AGC Group)

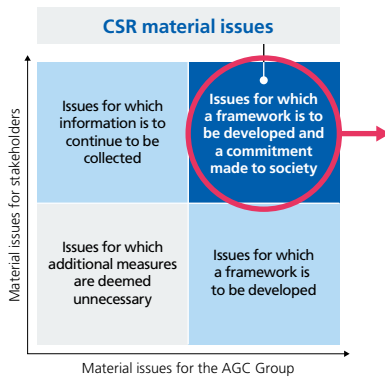
Purpose of Use	Amount	Rate
Donations, material donations	318 million yen	58%
Employee participation and dispatch	156 million yen	28%
Voluntary programs	47 million yen	8%
Opening of facilities, acceptance of tours	21 million yen	3%

# Product Responsibility

In 2011, the AGC Group began CSR monitoring based on ISO 26000. In CSR monitoring, issues defined in ISO 26000 are classified into four categories on the basis of their importance to either the AGC Group or its stakeholders. From these categories, a CSR Matrix is created, and issues judged important to both sides are recognized as CSR Material Issues. At present, there are eleven established CSR Material Issues, and their targets and current progress are provided on the following page.

**Note** Core ISO 26000 subject relating to product responsibility: "Consumer Issues"

**Matrix of CSR Issues**



**CSR Material Issues relating to the AGC Group**

ISO 26000 Items	Issues	AGC Group's material issues
Core subjects		
Organizational Governance	Decision-making processes and structures	<b>Organizational governance</b>
Human Rights and Labor Practices	Conditions of work and social protection	<b>Fair working conditions</b>
	Health and safety at work	<b>Occupational health &amp; safety</b>
The Environment	Human development and training in the workplace	<b>Human resource development</b>
	Prevention of pollution	<b>Pollution prevention</b>
	Sustainable resource use	<b>Sustainable use of resources</b>
Fair Operating Practices	Climate change mitigation and adaptation	<b>Climate change initiatives</b>
	Anti-corruption	<b>Anti-corruption</b>
Consumer Issues	Fair competition	<b>Compliance with antitrust laws</b>
	Promoting social responsibility in the value chain	<b>Social responsibility in the supply chain</b>
	Protecting consumers' health and safety	<b>Product safety</b>

## CSR Material Issues Corresponding to Consumer Issues

### Protecting consumers' health and safety

#### Reasons for Selection

In recent years, as safety consciousness of society grows, the level of consumer product safety required by society has continued to rise. As a materials manufacturer, the AGC Group is aware that promoting solid initiatives for product safety with regard to its own products is important to its business activities.

#### ISO 26000 related actions and expectations

- Under normal and reasonably foreseeable conditions of use, provide products that are safe for users and other persons, their properties and the environment
- Assess the adequacy of laws, regulations and standards regarding health and safety (if a response is necessary, it should exceed the minimum safety requirements)
- Avoid the use of harmful chemicals in product development. If such chemicals must be included, products should be clearly labeled
- Assess and disclose information regarding human health risks before the introduction of new materials, technology or production methods
- Convey vital safety information to consumers using symbols
- Provide consumers with instructions regarding proper use of products and warnings about the risks that use may entail

## Results of Activities Relating to CSR Material Issues in 2018

**P**  
2018  
targets

### Improvement of risk management capabilities with regard to product safety

- Risk will be considered when implementing policy requests for every process involved in the creation of products and services
  - Employ preventive measures in addition to conventional efforts, taking into account the following risks:
    - 1 Risks in consideration of the lifecycle of both products and business
    - 2 Risks in consideration of B2B2C



**D**  
2018  
major  
initiative  
results

- In December 2017, a quality issue was detected in a portion of AGC Techno Glass's biological laboratory apparatus (centrifuge tubes). In response, each business division implemented a quality risk self-examination. These self-examinations set themes according to respective business activities, and specified focus products and processes matching those themes, in an endeavor to improve risk management.

(Example policy)

- 1 Using FMEA and risk assessments, implemented preventative measures improving the effectiveness of the design review system
  - 2 For business conducted in Japan, assessed product safety management conditions through self-examinations based on in-house regulations
- Zero major product-related accidents for the AGC Group in Japan



**C**  
Self-  
evaluation

**A**



**A**  
2019  
targets

### Improvement of risk management capabilities with regard to product safety

- Considering all processes that create products and/or services, continue thorough risk management that is conscious of their end use, and prevent any deviation from agreements both inside and outside the company

Criteria for Self-evaluation

**A:** Satisfactory level, in which the intended target has been achieved

**B:** Almost satisfactory level, in which a part of the intended target has not yet been achieved and some issues still remain

**C:** Unsatisfactory level, in which the intended target has not been achieved

## Quality Assurance

### Fundamental Approach

In line with the AGC Group Basic Quality Policy, the AGC Group strives to raise the quality of its products and services.

### Management Structure

Under the AGC Group Basic Quality Policy, the AGC Group has established autonomous quality management systems that comply with ISO 9001 and similar standards in each division. To this end, the Group conducts internal audits and reviews in a manner best suited to the business and division in question, and continuously improves the effectiveness and efficiency of quality management systems. In addition, the AGC Group has been integrating initiatives related to Environment, Occupational Health & Safety and Quality (EHSQ) into its group-wide management in accordance with the EHSQ management system established in 2013.

Regarding quality, quality control personnel in each division attend an expanded quality meeting once a year to share information on issues and case studies. In 2018, the meeting was focused on sharing information to prevent risk stemming from deviation from laws and standards that apply to the AGC Group's services and products.

Under the revision of ISO 9001 in 2015, the Group is working on revising quality management structure.

### ●Acquisition of ISO 9001 and ISO/TS 16949<sup>1</sup> Certification

As of the end of December 2018

Location	Number of certified organizations
Japan	33
Asia other than Japan	29
Europe	60
The Americas/South America	2
<b>Total</b>	<b>124</b>

Note Percentage of AGC Group employees at the certified organizations: 81.5%

<sup>1</sup> Standards for quality management systems to be applied in the automotive industry, which requires compliance with the global procurement criteria for automotive parts

### Group-wide Initiatives

#### Compliance with Legal and Regulatory Requirements regarding for Products

The AGC Group strictly complies with laws and regulations regarding products by creating a list of requirements for each business division and clarifying the legal and regulatory requirements that each product must meet. The content of the list is subject to appropriate review. The Group began expanding this initiative to Asian countries in 2012.

### AGC Group Basic Quality Policy

(Established on September 8, 2004 and revised on March 29, 2013)

#### Basic Policy

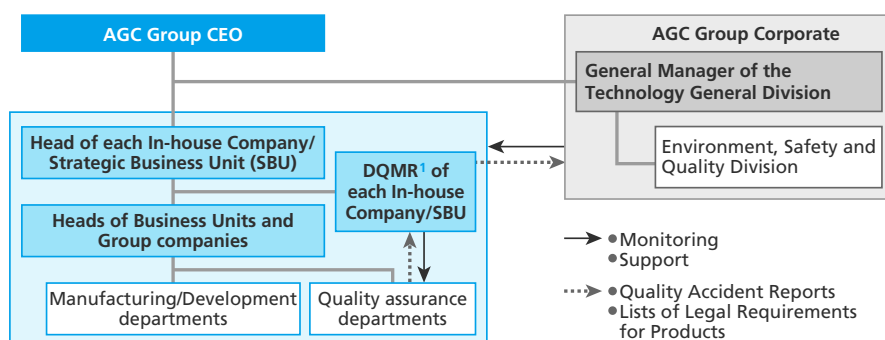
The AGC Group will continue to create the expected value by pursuing "Innovation & Operational Excellence" as one of the Shared Values in the Group Vision "Look Beyond".

#### Guidelines for Quality Activities

Having "Incorporating the concept of CS into daily work processes" as the fundamental of our businesses, we will act to gain trust from our stakeholders including customers, based on the following guidelines.

1. We will provide products and services that conform to the requirements of laws, regulations, and customers.
2. We will ensure and improve the quality of our products and services including appropriate consideration to safety and environment.
3. We all will participate in the continual improvement of effectiveness and efficiency of our quality management, and each of us will individually strive to enhance the value of our work.
4. In order to ensure that the above points are materialized, each will establish individual policy and target, and implement the PDCA cycle.

### ●Quality Management System



<sup>1</sup> DQMR: Division quality management representative



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## Group-wide Initiatives

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### Compliance with Legal and Regulatory Requirements regarding for Products

The AGC Group strictly complies with laws and regulations regarding products by creating a list of requirements for each business division and clarifying the legal and regulatory requirements that each product must meet. The content of the list is subject to appropriate review. The Group began expanding this initiative to Asian countries in 2012.

### Notice regarding improper issuance of quality assurance certificates by AGC Technoglass Co., Ltd.

In December 2017, it was discovered that one portion of an AGC Technoglass Co, Ltd. product—centrifuge tubes; biological experiment apparatus—had been receiving quality assurance certification without actually completing the DNase detection test, an important quality assurance item.

In order to prevent such incidents from ever occurring, AGC is strengthening quality assurance and shipping management across the Group, and re-examining its quality assurance certification system from the ground up.

<https://www.agc.com/en/news/pdf/20180110e.pdf>

## Product Safety Initiatives

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### Fundamental Approach

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Under the AGC Group's management policy of "increasing safety, security and comfort around the world," the Group conducts reviews from the perspective of product safety, from the product development stage through to trial manufacture and actual manufacture, to avoid harm or danger to the customer.

The Group fully discloses appropriate information for safe use of its products and has acquired Japan Industrial Standard (JIS) certification for some of its products. Product safety is also certified by third-party organizations.

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### Management Structure

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Within the AGC Group, each division builds autonomous quality management systems that comply with ISO 9001 and other standards. The Group also conducts internal audits and reviews best suited to the business and division in question and continuously improves the effectiveness and efficiency of quality management systems.

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### Group-wide Initiatives

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#### Compliance with the Consumer Product Safety Act

The AGC Group (Japan) has created a system to promptly report serious accidents regarding Group products to the Consumer Affairs Agency and prevent damage escalation, based on the Consumer Product Safety Act Working Standards (revised 2014). By confirming risk management conditions on a regular basis corresponding to the risk level set for the product in question and through other initiatives, the Group seeks to prevent accidents before they occur.

Adding to these efforts, information on product accidents released by the Consumer Affairs Agency and National Institute of Technology and Evaluation (NITE) is collected and classified when it concerns AGC Group products. The information is shared internally.

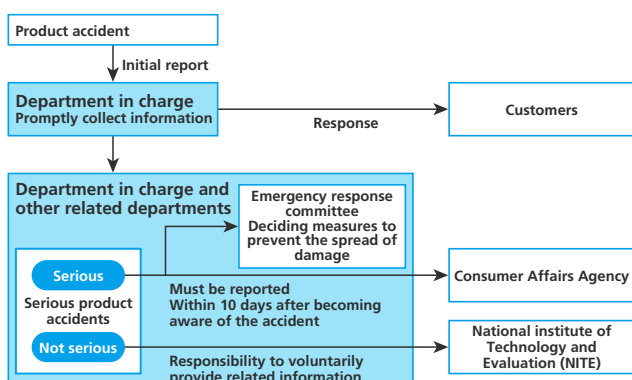
Study meetings are held to allow the employees in charge at related Group divisions to foster product safety.

In fiscal 2018, the AGC Group neither discovered nor reported any serious incidents stemming from a product defect.

● Change in the Number of Reported Serious Product Accidents (AGC Group in Japan)

FY	Number of cases
2014	0
2015	1
2016	1
2017	0
2018	0

● Reporting Flow for Serious Product Accidents under the Consumer Product Safety Act



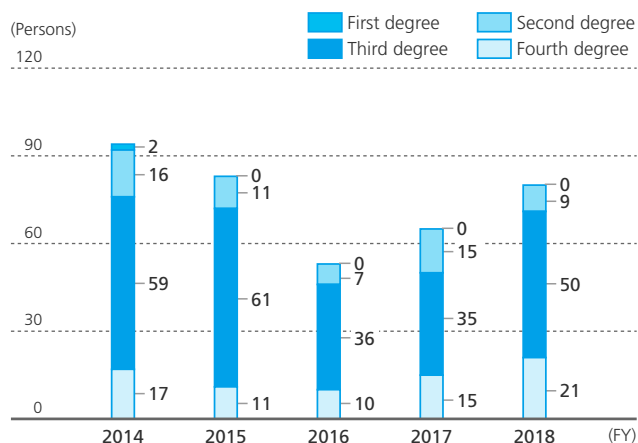
Implementing Quality Training

The AGC Group provides quality training in each business division according to their respective needs. Based on necessity, the Group is also taking steps to raise quality awareness through quality compliance training for employees based on internal and external quality case studies.

The AGC Group (Japan) encourages its employees to acquire a certificate on quality control (QC<sup>1</sup>). In 2018, 80 Group employees obtained such certification.

<sup>1</sup> QC Certificate: A certificate on quality control (QC) issued by the Japanese Society for Quality Control

● Number of Employees Who Passed the QC Certification Examination (AGC Group in Japan)



Regarding AGC Techno Glass' Recall of Heat-resistant Glass Bowls

A portion of heat-resistant glass bowls ("iwaki new bowl," 700 ml) sold by AGC Techno Glass from February to August 2018 were recalled beginning August 16, 2018 due to fine cracks that caused some bowls to separate.

The bowls were manufactured in January 2018 and 2,363 of them were sold from February to August of the same year. As of December 2018, 755 of them (34.4%) have been recalled. Further, as of June 2019, there have not been any reports of injury or ill health as a result of this recall.

## Pursuit of Customer Satisfaction (CS)

### Fundamental Approach

The AGC Group constantly strives to achieve Customer Satisfaction (CS). The Group defines customers as “people and organizations who receive benefit (value) from the products and information entailed in the AGC Group’s work,” and as such, the Group works towards CS of not only business customers but all Group members.

### Management Structure

Under the quality management system of the AGC Group, each company takes various measures to enhance Customer Satisfaction (CS). In addition to conducting CS education through rank-specific training, the Group actively works to ensure the CS spirit is rooted in the AGC Group’s corporate culture.

### Group-wide Initiatives

#### Implementing Full-Scale CS Training

Based on the management policy of bringing new value, functionality and trust to Group customers and clients, the employees of AGC incorporate the Customer Satisfaction (CS) viewpoint into their daily activities as a fundamental aspect of their work.

To add further value for its customers, the Group provides specialized CS training and other kinds of training to all divisions based on their specific characteristics. Moreover, CS is an important theme in the Group’s rank-specific training.

As of December 31, 2018, 8,097 employees (excluding training provided by specific divisions) have undergone CS training.

#### Customer Service

The AGC Group seeks to provide Customer Satisfaction (CS) by establishing customer centers and customer service windows for specific businesses.

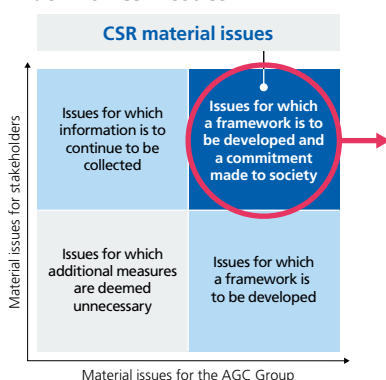
The Building & Industrial Glass Company (Japan) has established a customer center for architectural glass to respond accurately to inquiries from customers in the building industry, as well as regular customers. The Building & Industrial Glass Company (Europe) also produces websites for customers in multiple local languages.

Also, the Chemicals Company has created inquiry forms on its website in 10 languages. A system is established to automatically forward inquiries accepted through these forms to the most qualified specialist available, depending on target business, product and region of the sender, and a timely response is sent to them.

# Environmental

In 2011, the AGC Group began CSR monitoring based on ISO 26000. In CSR monitoring, issues defined in ISO 26000 are classified into four categories on the basis of their importance to either the AGC Group or its stakeholders. From these categories, a CSR Matrix is created, and issues judged important to both sides are recognized as CSR Material Issues. At present, there are eleven established CSR Material Issues, and their targets and current progress are provided on the following page.

**Matrix of CSR Issues**



**CSR Material Issues relating to the AGC Group**

ISO 26000 Items		AGC Group's material issues
Core subjects	Issues	
Organizational Governance	Decision-making processes and structures	<b>Organizational governance</b>
Human Rights and Labor Practices	Conditions of work and social protection	<b>Fair working conditions</b>
	Health and safety at work	<b>Occupational health &amp; safety</b>
The Environment	Human development and training in the workplace	<b>Human resource development</b>
	Prevention of pollution	<b>Pollution prevention</b>
	Sustainable resource use	<b>Sustainable use of resources</b>
Fair Operating Practices	Climate change mitigation and adaptation	<b>Climate change initiatives</b>
	Anti-corruption	<b>Anti-corruption</b>
	Fair competition	<b>Compliance with antitrust laws</b>
Consumer Issues	Promoting social responsibility in the value chain	<b>Social responsibility in the supply chain</b>
	Protecting consumers' health and safety	<b>Product safety</b>

## CSR Material Issues of the AGC Group Corresponding to the Environment

### Prevention of pollution

#### Reasons for Selection

The problems caused by environmental impact and waste stemming from corporate activity affect the planet and local environment in a variety of ways, and the society is growing more concerned about preventing pollution and reducing environmental impact.

We recognize that preventing pollution and reducing environmental impact are our manufacturing industry's responsibilities.

#### ISO 26000 related actions and expectations

- Identify the impacts of its decisions and activities on the environment
- Identify the sources of pollution and waste related to the activities
- Measure, record and report on its significant sources of pollution and reduction of pollution, water consumption, waste generation and energy consumption
- Implement measures aimed at preventing pollution and waste and properly manage unavoidable pollution and waste
- Prepare an environmental accident prevention programme and an emergency plan involving workers, authorities, local communities and other relevant stakeholders

### Sustainable resource use

#### Reasons for Selection

As the world economy develops, resource procurement risks are becoming apparent on a global scale. Risks are particularly marked in energy and water procurement, and in rare metals, which are supplied by only a few regions. The AGC Group belongs to a business category that uses a relatively large amount of natural resources and energy, as well as rare metals and other materials. Accordingly, we consider the importance of procurement and decrease of such resources.

#### ISO 26000 related actions and expectations

- Identify the sources of energy, water and other resources used
- Measure, record and report on its significant uses of energy, water and other resources
- Implement measures to reduce its use of energy, water and other resources

### Climate change mitigation and adaptation

#### Reasons for Selection

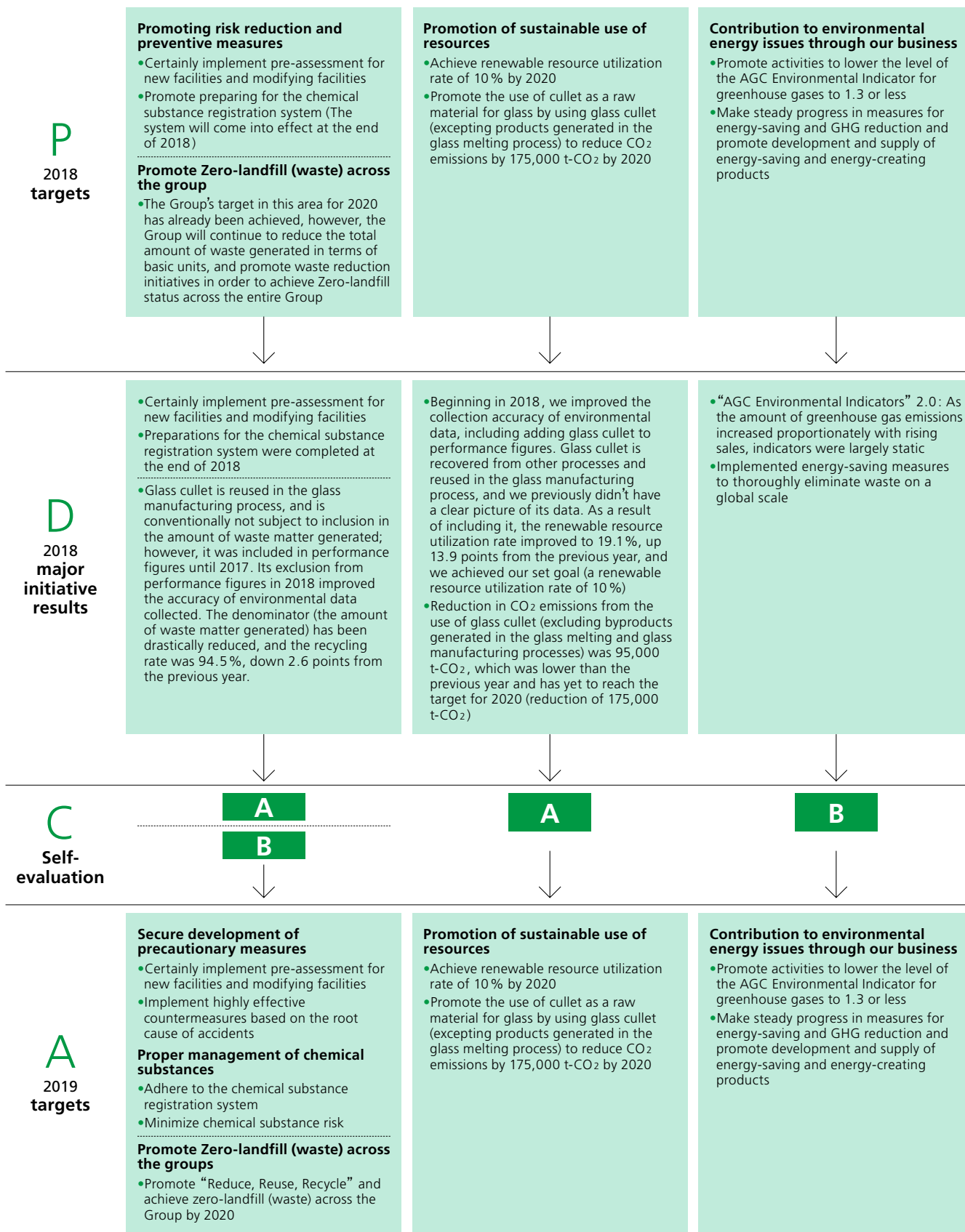
The demands and expectations of society regarding corporate initiatives to work for climate change issues is rising, to the extent that corporations are being requested to disclose their efforts for climate change and the amount of GHG emissions.

The AGC Group belongs to a business category that uses a relatively large amount of natural resources and energy. Accordingly, we consider its responsibility to reduce GHG emissions and energy usage.

#### ISO 26000 related actions and expectations

- Identify the sources of direct and indirect GHG emissions and define the scope of its responsibility
- Measure, record and report on its significant GHG emissions, preferably using methods defined in internationally agreed standards
- Implement measures to reduce the direct and indirect GHG emissions within its sphere of influence
- Realize energy savings by purchasing of high energy efficient goods and development of energy efficient products

## Results of Activities Relating to CSR Material Issues in 2018



Criteria for Self-evaluation **A:** Satisfactory level, in which the intended target has been achieved  
**B:** Almost satisfactory level, in which a part of the intended target has not yet been achieved and some issues still remain  
**C:** Unsatisfactory level, in which the intended target has not been achieved

## Environmental Management

### Fundamental Approach

Efforts to address environmental issues are being called for worldwide, and the AGC Group has positioned the environment as one of its most important management issues in terms of fulfilling social responsibility. The Group has included the environment in Our Shared Values, a set of values held by Group employees that acts as the foundation for employee behavior. Moreover, the Group has declared in the AGC Group Environment Policy that it will promote environmental initiatives in all phases of its business activities.

Based on this understanding and philosophy, the AGC Group is working to minimize the environmental impact of using energy and resources in manufacturing processes and is striving to solve environmental problems through its products.

#### AGC Group Environment Policy

(Revised on January 1, 2019)

##### Principle

At AGC Group we recognize that our businesses activities, by using a large amount of resources and energy, have an impact on the environment. In line with AGC Group vision **“Look Beyond”**, we have set the “environment” as one of our company shared values and we are committed to take actions accordingly.

We are also committed to contribute to the creation of a sustainable society as an outstanding player in the global Materials Industry by efficiently utilizing limited resources and energy and by taking account into due consideration our impact on the natural environment, including climate change and biodiversity.

##### Slogan

Let's all contribute to environmental activities, as a good global citizens.

##### Environmental codes of conduct

We commit to adhere to the following key principles:

1. Improve the environmental performance continuously, in accordance with environmental management system.
2. Comply with internal and external relevant environmental rules worldwide.
3. Set goals and do our utmost towards improving environmental impact of our business by addressing responsible use of resources, climate change mitigation and adaptation, waste avoidance and recycling, as well as appropriate management of chemicals substances.
4. Strive to offer to society our products, service and technologies taking into due consideration their environmental impacts.
5. Communicate about our progress to our internal and external stakeholders.

### Management Structure

In 2000, the AGC Group launched its Consolidated Business Management for Environment and Safety (Environment and Safety Consolidated Management), principally targeting worldwide consolidated companies engaged in manufacturing. Since 2013, the Group has been using the EHSQ (Environment, occupational Health & Safety and Quality; see page 8) Management System constructed for integrated management of product quality and other matters.

Under the EHSQ Management System, all subsidiaries work together to identify pertinent environmental activities based on their unique characteristics and impact on the environment, irrespective of whether they are consolidated companies or engaged in manufacturing. The Corporate Division, supervising in-house companies and various business sites provide support, allowing companies that have newly joined the AGC Group through M&As to participate in the Group's environmental activities as quickly as possible.

The Environmental group of the Corporate Environment, Safety, and Quality Division supports the collection of legal and regulatory information related to the environment for the AGC Group, the establishment of policies and standards for the entire Group, and the operation of the environmental security and disaster prevention performance management system.

#### The AGC Group's ISO 14001 Integrated Certification

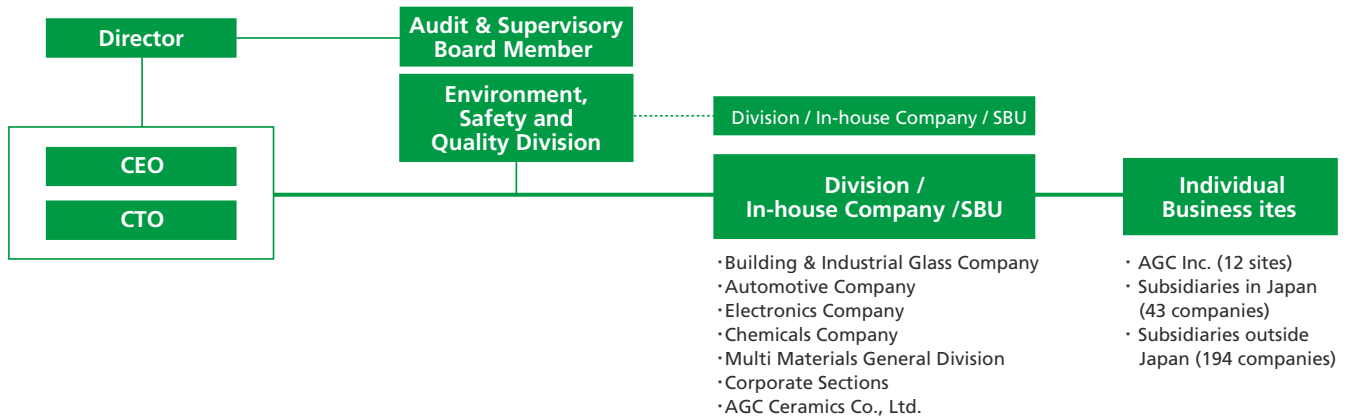
In addition to Group-wide activities, the AGC Group built an integrated environmental management system (AGC Integrated EMS) targeting AGC and some subsidiaries in 2003 and uses the mechanism to continuously improve the environmental management of the AGC Group. Organizations subject to Integrated EMS are reviewed by a single external review organization under the same assessment criteria, and receive a single ISO 14001 certification.

The inputs and outputs of the management review and the results of the external review are effectively used as an opportunity to understand the AGC Group's scope for improvement, and to formulate policies and plans for the next fiscal year and beyond.

Even at Group companies that do not subscribe to AGC Integrated EMS, we have built a management system that responds to the characteristics of each business and region, thereby continuously improving the environmental activities of the AGC Group. In addition, supervisory in-house companies and the Environment Office of the Corporate Environment, Safety and Quality Division monitors the environmental activities of the entire Group through an understanding of external organization's examination results.



● Integrated EMS Organization Chart (As of March 31, 2019)



● ISO 14001 Integrated Certification within the AGC Group

As of April 30, 2019

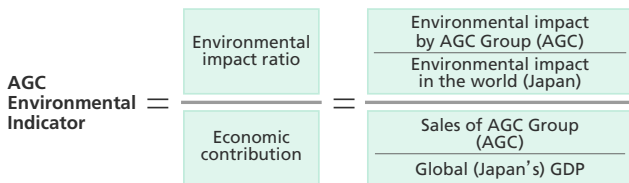
Location	No. of companies	No. of sites with integrated certification
AGC	1	12
Group companies in Japan	43	66
Group companies in Asia other than Japan	56	31
Group companies in Europe	117	9
Group companies in the Americas	21	14
<b>Total</b>	<b>238</b>	<b>132</b>

## Environmental Impact

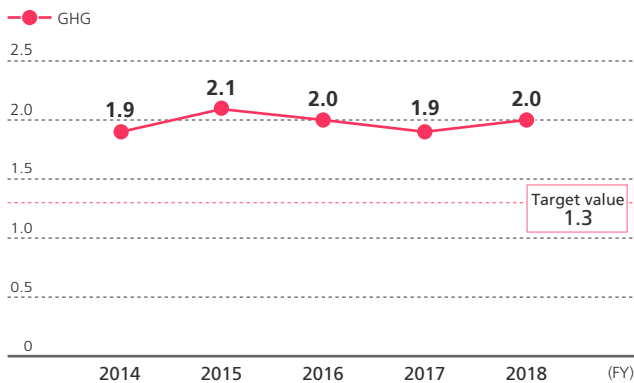
### “AGC Environmental Indicator” to Determine Environmental Impacts

The AGC Group formulated the AGC Environmental Indicator as an index of environmental efficiency to independently assess the environmental impact of its manufacturing activities. Using this indicator, the Group can calculate how the environment is affected in relation to improvements in the Group’s economic performance, while at the same time striving to reduce the environmental impact shown by the indicator.

#### ●AGC Environmental Indicator Calculation Method



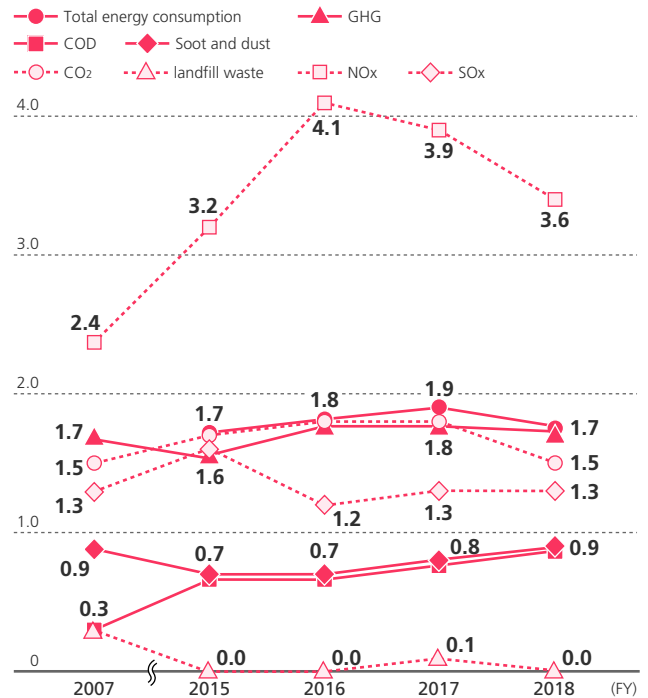
#### ●AGC Environmental Indicator (AGC Group)



**Note 1** Economic contributions are calculated in USD against the AGC Group’s overall revenue and global GDP.

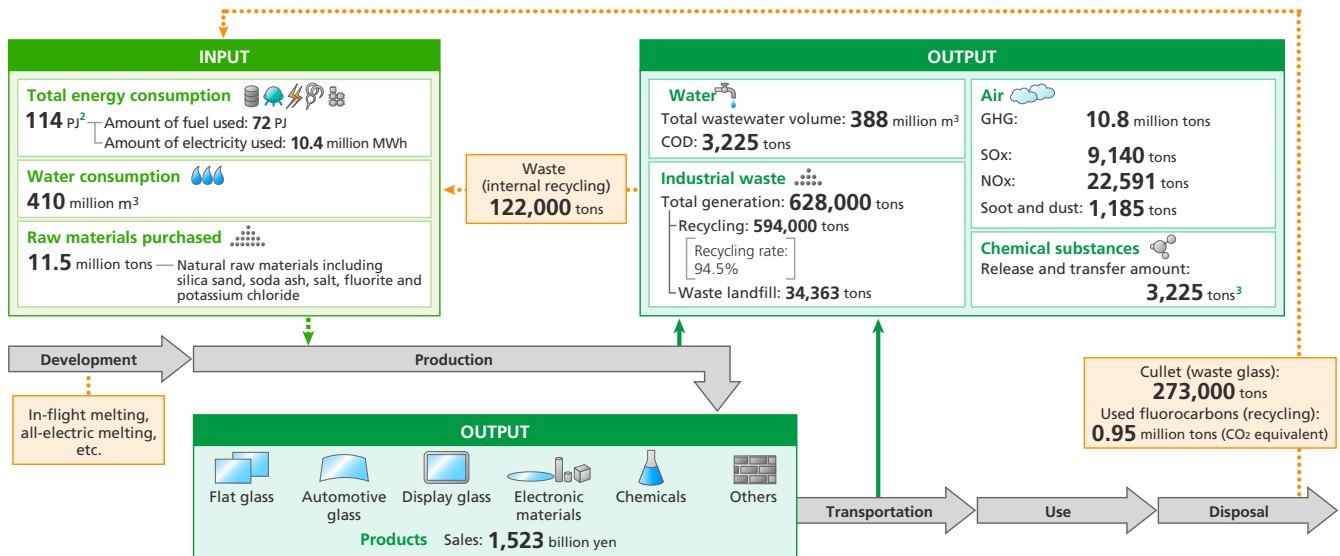
**Note 2** For details on greenhouse gases, please see Climate Change Initiatives on page 63.

#### ●AGC Environmental Indicator (AGC)



**Note** Heat quantity calculated against total energy consumption using a rate of 3.6MJ/kWh. Figures from FY2007 are based on coefficient established in the Japanese Energy Conservation Act, which are not plotted in the graph above.

● **Material Balance (AGC Group)**



**Note 1** Due to rounding, the totals for respective items do not necessarily match.

**Note 2** PJ (peta joule) = 10<sup>15</sup> J (joule)

**Note 3** Total emissions of substances regulated by the PRTR Act (in 2018)

## Environmental Accounting

### Costs and Benefits by Environmental Conservation

The AGC Group utilizes environmental accounting data to quantify managerial resources spent on reducing environmental impact and the resulting effects. The calculation method is based on the proprietary AGC Environmental Accounting Calculation Manual created in line with the Environmental Accounting Guidelines 2005 (published by the Ministry of the Environment).

#### ● Environmental Conservation Cost (AGC Group)

(Millions of yen)

	Investment	Cost
2016	13,800	35,600
2017	18,800	36,700
2018	25,000	37,900

**Note** Some data used in the environmental conservation cost calculation process, is estimated based on actual performance data from AGC.

#### ● Environmental Conservation Benefits<sup>1</sup> (AGC Group)

Item	Change in environmental impact <sup>2</sup>	Simple Y-to-Y change	Sales-corrected change <sup>3</sup>
Total energy consumption	+3 PJ	+3%	-1%
Greenhouse gas emissions	+230,000 t-CO <sub>2</sub>	+2%	-2%
Waste landfill	+12,000 t	+54%	+48%
COD discharge	+478 t	+17%	+13%
SOx emissions	+2,488 t	+37%	+32%
NOx emissions	-512 t	-2%	-6%
Soot and dust emissions	+468 t	+65%	+59%

<sup>1</sup> Change in environmental impact and simple Y-to-Y change: A positive figure indicates an increase and a negative figure indicates a decrease in environmental impact from the previous year's level.

<sup>2</sup> Change in environmental impact = (2018 output volume) - (2017 output volume)

<sup>3</sup> Sales-corrected change = Simple Y-to-Y change/Y-to-Y sales ratio  
AGC Group Y-to-Y sales ratio = (2018 sales)/(2017 sales) = 1.04

## Climate Change Initiatives

### Fundamental Approach

The effects of climate change are becoming more serious each year, including natural disasters such as heavy rainfall, floods and droughts, and adverse effects on agriculture and fishing caused by rising temperatures. The Paris Agreement, an international framework on climate change issues, was signed in 2015, and there is currently growing interest in global warming around the world, as well as expectations regarding the role that private companies, not just countries and governments, should play. Recognizing that it operates a business that uses a large amount of energy, the AGC Group aims to contribute to the realization of a sustainable society by reducing its emissions of greenhouse gases (GHG) throughout product lifecycles, from procurement to manufacturing, sales, distribution, use and disposal.

In addition, investors and other stakeholders are becoming increasingly interested in the disclosure of climate-related financial

information, including the potential impact on businesses from the risks and opportunities that accompany the transition to a low-carbon economy. Under the direction of the CEO, the AGC Group announced its approval of the TCFD\* recommendations in May 2019. In the future, the Group will promote information disclosure based on these recommendations.

\* TCFD: Task Force on Climate-related Financial Disclosures

### Risks and opportunities

The AGC Group recognizes that the various risks and opportunities associated with climate change are important factors when formulating strategies for management and business. Moving forward, AGC Group management will formulate management and business strategies with these factors in mind.

#### ● Specific examples of climate change risks and opportunities

Type	Content	
Accompanying risk	Policies, laws and regulations	• Cost increases due to carbon pricing, such as a carbon tax, and other expanded regulations on GHG emissions
	Technology	• Increased costs to realize the transition to low carbon technology, such as establishment of manufacturing methods that do not require fossil fuels
	Markets	• Decrease in demand for existing products due to consumer preferences changing
Physical risks	Short-term	• Effects on operations and logistics due to natural disasters such as heavy rainfall, floods and droughts
	Long-term	• Effects on operations and logistics due to inundations caused by long-term sea level rise, storm surges and typhoons stemming from an average temperature increase • Heatstroke in hot workplaces during the summer due to the rise in average temperature
Opportunities	Resource efficiency	• Cost reductions through more efficient use of mineral and water resources • Diversification of raw material options by utilizing recycled resources such as glass cullet and recovered fluorite
	Products and services	• Development and sales promotion of products that contribute to the alleviation of and adaptation to climate change, such as low-e double-glazing glass, alternative fluorocarbons with low global warming potential, and ion exchange membranes that contribute to the production of drinking water and water reuse
	Markets	• Access to new markets leveraging the strengths of the Group's technologies

### Strategies and measures

In order to mitigate climate change, the AGC Group has set a goal of achieving a GHG emissions intensity value (an AGC environmental indicator) of 1.3. To achieve this goal, the Group is promoting energy saving in the manufacturing process, introducing a cogeneration system, improving the manufacturing process with fuel conversion and process innovation technology, and reducing the emission of fluorocarbons. The Group is focusing on supplying products that help reduce GHG emissions when other

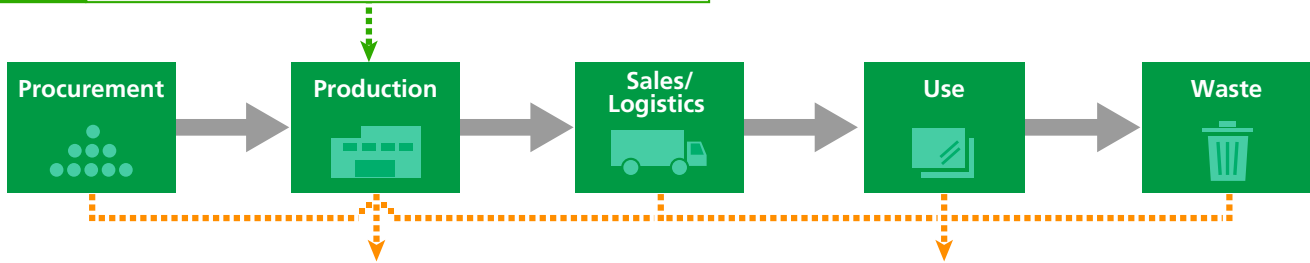
products are used. The Group has also formulated a corporate motto for CO<sub>2</sub> emissions in 2020, aiming for an offset of six times its annual CO<sub>2</sub> emissions emitted during manufacturing by the same year—made possible through its energy-saving and energy-creating products. Under this motto, the Group is actively working on development and sales of energy-saving and energy-creating products.

The Group is also evaluating the water risks arising from climate change in efforts to adapt to its effects.

●2018 Energy-Related Material Balance (AGC Group)

**IN PUT** **Total energy consumption**

**114 PJ** — Amount of fuel used **72 PJ**  
 — Amount of electricity used **10.4 million MWh**  
 Amount of used heat purchased externally **3.5 PJ**  
 Amount of low carbon energy used **0.8 PJ**



**OUT PUT** **GHG Emissions**

Scope 1+2<sup>1</sup> **10.7 million t-CO<sub>2</sub>**  
 — Scope 1 **5.3 million t-CO<sub>2</sub>**  
     (as) CO<sub>2</sub> emissions **5.2 million t-CO<sub>2</sub>**  
     Greenhouse gases other than CO<sub>2</sub> **133 thousand t-CO<sub>2</sub>**  
 — Scope 2 **5.4 million t-CO<sub>2</sub>**

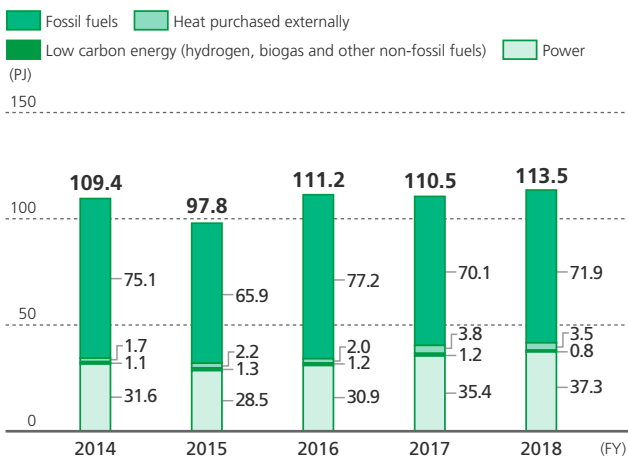
**OUT PUT** **GHG Emissions**

Scope 3 **9.1 million t-CO<sub>2</sub>**

<sup>1</sup> Because the AGC Group's disclosed data for GHG emissions (the following diagram, etc.) includes partial Scope 3 data, it differs from the values for Scope 1 + 2.

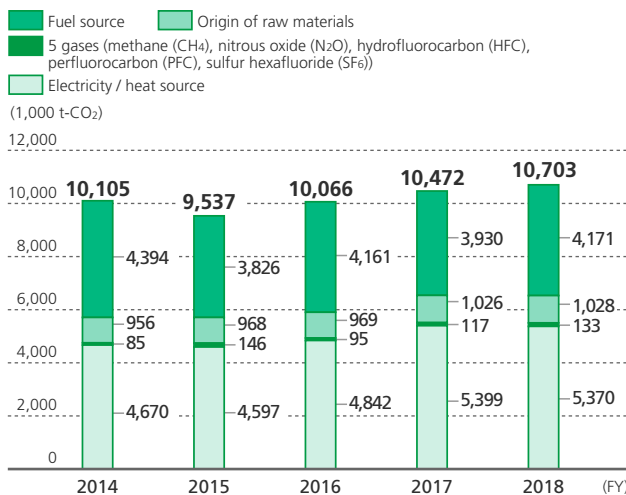


●Trends in Total Energy Inputs



1 Due to rounding, the percentage sum for each item does not necessarily amount to 100%.  
 2 Heat quantity calculated against total energy consumption using a rate of 3.6MJ/kWh.

●Trends in GHG Emissions



Group-wide Initiatives

Energy Conservation and CO2 Reduction in the Manufacturing Process

The AGC Group has set a target value of 1.3 as measured by the AGC Environmental Indicator for GHG emissions.

To this end, the Group is promoting energy conservation activities in manufacturing processes, introducing cogeneration systems, saving energy in the exhaust gas treatment process by fuel conversion from heavy oil to natural gas, improving manufacturing processes through total oxygen combustion and other techniques and thereby saving energy, and conducting utility-related energy conservation assessments.

In order to respond to rising infrastructure demands in Asian regions, the AGC Group is increasing the production capacity of its local glass and chemicals businesses. To fulfill its social responsibility in local business operations, the Group promotes measures to simultaneously expand production and reduce environmental impact.

●Trends in Energy-Related Data in Manufacturing Processes (AGC Group)

Input	2017	2018
Electricity used (million MWh)	9.8	10.4
Fuel used (PJ)	70.1	71.9
Amount of heat purchased externally (PJ)	3.8	3.5
Amount of low carbon energy used (PJ)	1.2	0.8
Output	2017	2018*
GHG Emissions: Scope 1 (million t-CO2)	5.1	5.3
GHG Emissions: Scope 2 (million t-CO2)	5.4	5.4
CO2 Emissions: Scope 1+2 (million t-CO2)	10.4	10.6

Note GHG emissions in and FY2018 marked with a star have been assured by KPMG AZSA Sustainability Co., Ltd.

GHG emissions (Scope 1 / Scope 2) are calculated in compliance with the Act on the Rational Use of Energy (Energy Conservation Act) and Act on Promotion of Global Warming Countermeasures (Global Warming Act) of Japan. For the electric power emission factor, the factors of individual providers of electric power or that of the IEA (International Energy Agency) are used (at some overseas offices / plants). GWP as per IPCC Fourth Assessment Report is used to calculate GHG other than CO2. The boundary of the data includes AGC and 108 domestic and overseas group companies.

## Reduction of Fluorocarbon Emissions in Manufacturing Processes

The AGC Group manufactures and sells products that emit greenhouse gases besides CO<sub>2</sub>, including fluorinated gases such as HFCs and SF<sub>6</sub>. Because the Global Warming Potential (GWP) of these fluorocarbons can range from 124 to 22,800 times that of CO<sub>2</sub>, they are considered to seriously influence climate change.

The AGC Group is actively working to reduce the fluorocarbon emissions generated by its manufacturing processes through recovery and other means.

## Reduction of Leakage of Fluorocarbons from Commercial Air Conditioners and Refrigerators

Based on the Japanese Law Concerning the Discharge and Control of Fluorocarbons (effective 2015), AGC has calculated and reported fluorocarbon leakage amounts to the Japanese government since FY 2015. Figures reported were as follows. FY 2015: 9,556 t-CO<sub>2</sub>, FY 2016: 10,238 t-CO<sub>2</sub>, FY 2017: 15,896 t-CO<sub>2</sub>, and FY 2018: 42,580 t-CO<sub>2</sub>.

In FY 2018, a number of large refrigeration units were up for planned maintenance, and because their fluorocarbon levels had gradually decreased over time, they were replenished, causing the drastic increased record compared to last year.

During these planned maintenances, in addition to replenishing the fluorocarbon levels in the refrigeration units, leakages were identified and leakage prevention measures, including repair and maintenance of leaking parts, were implemented. Also, aging refrigeration units throughout the AGC Group are updated sequentially to state-of-the-art units that use refrigerants with low GWP values.

In addition to the inspections required by relevant laws and regulations, AGC has committed to minimizing Fluorocarbons by running proper management system with understanding the condition of its equipment and fluorocarbon levels.

## Energy Conservation in Offices

The Group is working to reduce the environmental impact of its office buildings.

When relocating the AGC Group headquarters in 2011, conservation measures directly related to the facility included LED lighting, the introduction of an automatic lights-off system and installation of Attoch, an Eco glass ideal for energy-saving window renovations. The Group also took “soft” measures, including visualizing its energy consumption by area and time frame and continuing energy conservation education for transferred personnel. As a result, the amount of energy used was reduced by approximately 35% compared to before the relocation. As a result of continuous improvement thereafter, in the evaluation of specified tenants and other establishments by the city of Tokyo, the performance of the AGC Group from 2014 to 2015 received the second highest evaluation of AAA, and its performance in 2016 received the highest evaluation of S.

Also, the AGC Glass Europe company office building in Belgium, which was completed in 2014, employs insulation, heat shields and highly transparent glass that minimize the need for air conditioning and lighting. Also, electricity generated by solar and geothermal power is utilized to offset energy use in the facility, bringing the energy balance of the building to nearly zero.

In 2018, AGC completed construction of an office building at the AGC Kashima Plant that creates more energy than it consumes, with a theme of “realizing energy saving and energy creation through AGC Group products.” In addition to utilizing AGC Glass insulating and heat shielding products that contribute to energy conservation, the plant also uses glass-integrated solar photovoltaic modules for windows to create energy at openings in the building, as well as on the roof.

## Energy Conservation in Logistics

The AGC Group is actively shifting to a modality employing rail and shipping in various regions. Moreover, by using large energy efficient trucks and ships, the Group is reducing its energy usage in logistics.

## GHG Emissions in the Supply Chain and Value Chain

The AGC Group calculates GHG emissions up to the point that purchased raw materials are transported to plants. It also calculates GHG emissions up to the point that products are delivered to the customer and discarded after use.

### ● Scope 3 GHG Emissions (AGC Group)

FY	Scope 3
2017 (million t-CO <sub>2</sub> )	7.3
2018 (million t-CO <sub>2</sub> )★	9.1

**Note** GHG emission levels in FY2018 marked with a star have been assured by KPMG AZSA Sustainability Co., Ltd.

GHG emission levels (Scope 3) calculation method  
GHG emissions (Scope 3) are calculated by category according to the GHG Protocol Scope 3 Standard as detailed in the chart on the next page.

Category	Overview	Calculation method
1	Purchased goods and services	Emissions calculated by multiplying resource input volume of product production by the emission intensity* per material.
2	Capital goods	Calculated by multiplying the amount of capital investment related to capital goods by the emission intensity* corresponding to the investment amount.
3	Fuel- and energy-related activities (not included in Scope 1 or Scope 2)	Calculated by multiplying the fuel and energy input amount at AGC Group offices / plants by the emission intensity* for individual fuels / energy sources.
4	Upstream transportation and distribution	Calculated based on the amount of resources input during product production and the ton-kilometer data for product transportation, where (1) the amount of emissions related to procurement of materials / parts, and (2) the amount of emissions from transportation at the time of shipping the product are multiplied by the emission intensity.*
5	Waste generated in operations	Calculated by multiplying the amount of externally disposed waste by the emission intensity per treatment method.*
6	Business travel	Global emissions are calculated through an estimation based on employee makeup ratios, considering the result calculated by multiplying the travel expenses for AGC alone by the emission intensity per transportation method.*
7	Employee commuting	Global emissions are calculated through an estimation based on employee makeup ratios, considering the result calculated by multiplying commuting expenses for AGC alone by emission intensity per transportation method.*
11	Use of sold products	Calculated by multiplying the GHGs emitted directly through use of sold products at sales outlets by emission intensity per product*, based on assumed usage conditions.
12	End-of-life treatment of sold products	Calculated by subtracting the amount of waste at the manufacturing stage from the resource input amount and considering it as the amount of waste corresponding to the sold product, and multiplying this by the emission intensity per disposal method.*
15	Investments	Calculated by multiplying the CO <sub>2</sub> emissions of manufacturing companies in which the AGC Group invests by the Group's ownership ratio for each company in which the Group invests.

**Note** The emission intensity level refers mainly to the following documents: Emission intensity database for calculating greenhouse gas emissions by organizations through the supply chain (Ver.2.6) (Ministry of the Environment, Government of Japan), Basic Carbon Footprint Database (Ver. 1.01) / Carbon Footprint Common Output Level (Ver. 4.01) (Carbon Footprint Communication Program Secretariat), MILCA (Japan Environmental Management Association for Industry)

## GHG Emissions in Product Life Cycles

For some products, the AGC Group discloses environmental information by calculating GHG emissions from the time of procurement of raw materials up to delivery to customers.

With regard to concrete measures taken by the Group, AGC voluntarily issues an “EPD” (Environmental Product Declaration) for some products to provide purchasers and users with information on GHG emissions through the product's life cycle. Moreover, AGC Glass Europe discloses product environmental information in accordance with the C2C (Cradle to Cradle Certified™ Products) program.

## Our Products with Lower GHG Emissions during Use

The AGC Group is making efforts to develop and sell products that help reduce GHG emissions at the stage when products are used by customers, such as energy-saving glass and alternative fluorocarbons with low global warming potential.

## Examples of Energy Conservation Activities

### Expansion of the Energy Conservation Project

The AGC Group works to reduce the amount of its utility energy usage, such as electricity and steam.

At manufacturing sites in Japan and overseas, the Group renews and improves facilities based on an energy conservation assessment, and shares and horizontally deploys effective energy conservation measures.



An energy conservation audit

### Utilizing Renewable Energy

The AGC Group uses renewable energy at its business sites worldwide to promote the effective use of energy at Group properties and in production areas, also using AGC products to realize energy conservation and energy creation

### Expansion of Photovoltaic Panel Installation

Group companies of the AGC Glass Europe (AGEU) is installing photovoltaic panels in its plants and buildings. The amount of power generated in 2018 was 754 MWh, corresponding to 1% of the Group's power consumption.



Photovoltaic panels at the Cuneo Plant (Italy)

#### ● Main Overseas Sites Where Photovoltaic Panels Have Been Installed

Sites	Year of Installation
Osterweddingen Plant (Germany)	2009
Cuneo Plant (Italy)	2010
Zeebrugge Plant (Belgium)	2011
Mol Plant (Belgium)	2012
Roccasecca Plant (Italy)	2013
Fleurus Plant (Belgium)	2013
Moustier Plant (Belgium)	2013
AGC Glass Europe Headquarters (Belgium)	2013

The AGC Group has installed photovoltaic panels at three sites in Japan to promote their effective use at Group properties, and to realize energy conservation and energy creation through AGC products. The Group is also contributing funds to solar power generation projects. In 2018, 25,030 MWh of power were generated through photovoltaic panels.

#### ● Main Sites Where Photovoltaic Panels are Installed in Japan

Sites	Installation Year	Power Generated (kW)
Takasago Plant	2013	5,060
Eneseed Hibiki (Kitakyushu)	2014	11,002 (contribution by AGC)
Ako Plant	2015	4,260
Namamugi Warehouse	2016	624



### Introducing Biomass Energy

The AGC Group company Hokkaido Soda Co., Ltd. has installed biomass boilers that primarily burn wood materials to provide steam to its plant's production line. They were funded with subsidies from the 2016 renewable energy support initiative.

### Reducing Natural Resource Use to Save Energy

Mixing glass cullet (waste from the glass manufacture process) with glass raw materials allows glass to be manufactured with less energy compared to when using only natural raw materials, such as silica sand. In order to reduce CO<sub>2</sub> emissions produced in the manufacturing process, the AGC Group has set a goal of reducing CO<sub>2</sub> emissions by 175 thousand t-CO<sub>2</sub> (60 thousand t-CO<sub>2</sub> at AGC alone) by 2020 through the use of cullet.<sup>1</sup>

<sup>1</sup> Excludes those generated in glass melting processes

#### ● Reductions in CO<sub>2</sub> Emissions Through Use of Glass Cullet<sup>1</sup>

FY	AGC Group	AGC
2015 (1,000 t-CO <sub>2</sub> )	205	38
2016 (1,000 t-CO <sub>2</sub> )	202	43
2017 (1,000 t-CO <sub>2</sub> )	152	39
2018 (1,000 t-CO <sub>2</sub> )	95	26
2020 (Target) (1,000 t-CO <sub>2</sub> )	175	60

<sup>1</sup> Excludes those generated in glass melting processes

## Effective Use of Water Resources and the Prevention of Water Pollution

### Fundamental Approach

The AGC Group regards the effective use of water resources and prevention of water pollution as important for promoting the use of sustainable resources. As water is ubiquitous and imperative in all regions, it is vital to understand water risk conditions in each region and promote corresponding measures. Accordingly, in addition to determining the sites that are exposed to high water risk, each region has established mid-and long-term targets regarding water volume usage and water pollution.

### Group-wide Initiatives

#### Water Risk Assessment

The AGC Group conducts comprehensive evaluations of water risks, which are present in all regions, by considering the results of evaluations performed at each Group site using the WRI (World Resources Institute) tool "Aqueduct."<sup>1</sup> Information on any past disasters or difficulties related to water, the availability of emergency response equipment and BCP settings are also considered. Based on evaluation results, the Group implements countermeasures according to the characteristics of the area in question. These include installing reservoirs at sites with high risk of drought, relocating emergency power generation facilities from basements to the second floor or higher at sites with high flood risk, installing drain pumps at sites with high tide risk and more.

<sup>1</sup> A tool that indicates region-specific water risk

#### Recycling Water and Reducing Water Usage

The AGC Group takes in approximately 400 million m<sup>3</sup> for use as cleaning water and coolant water in its production processes, and roughly 85% of this is seawater used for indirect cooling. Of the fresh water that makes up 15% of the water intake, efforts are being made to use less water in the production processes and to recycle water that is used in order to use water resources more effectively.

The amount of fresh water recycled or cascaded in the production process is equivalent to about 16 times the amount of fresh water used. In 2018, the Group began initiatives building on existing measures, promoting wastewater recycling alongside cleaner water and a reduction in wastewater through water filtration.

#### Preventing Water Pollution

The AGC Group has established wastewater control targets that are tailored to the characteristics of each site, and makes global efforts to prevent water pollution.

The Group has also established a goal of 0.3 COD<sup>1</sup> in accordance with the AGC Environmental Indicator, implementing measures specific to each of its sites globally.

<sup>1</sup> Chemical Oxygen Demand: the amount of oxygen consumed in oxidizing the organic compounds in water with oxidizing agents.

#### Our Products bring Effective Use of Water

The AGC group provides products that contribute to the effective use of water resources. For example, the Group develops and sells ion-exchange membranes that make it possible to utilize water resources that could not otherwise be used and reuse purified wastewater.

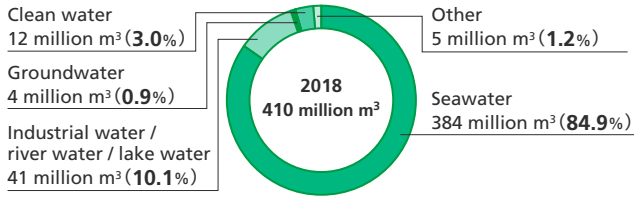
#### Disclosure of Water Usage through Product Recycling

Consumers that prefer to purchase products that consider environmental impact are on the rise. In an effort to give consumers and end users information on a product's environmental burden throughout its lifecycle, AGC Glass Europe and its group companies have voluntarily issued Environmental Product Declaration labels for some products. In 2015, they received high praise for its float flat glass in the Water Stewardship category of the Cradle to Cradle<sup>1</sup> certification, being awarded silver.

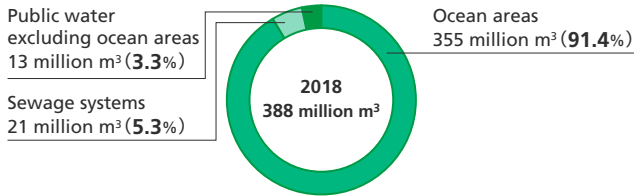
<sup>1</sup> Certification is awarded across five categories, including Material Health, Water Stewardship, and more.



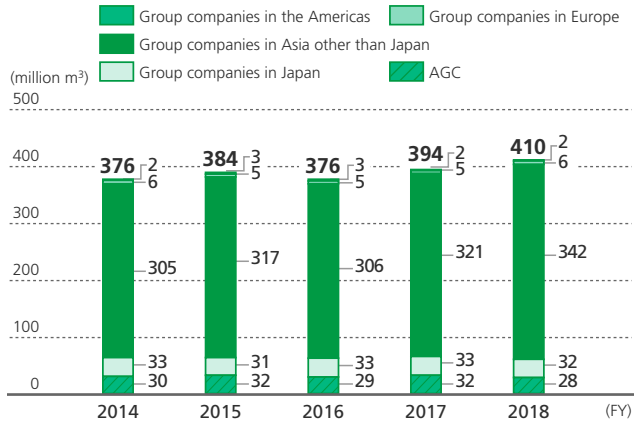
● Total Water Intake (AGC Group)



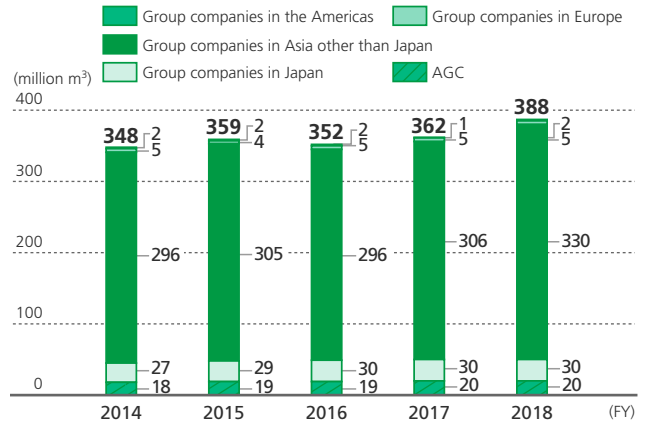
● Total Wastewater (AGC Group)



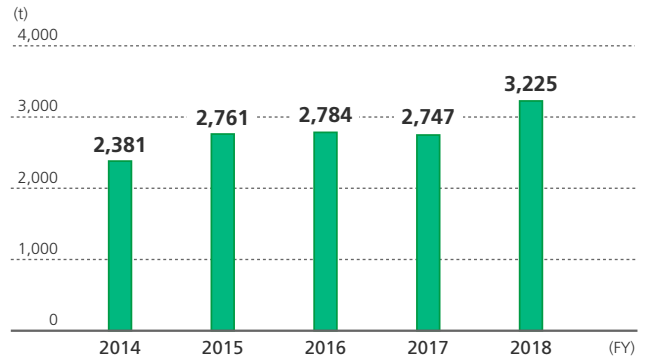
● Trends in Total Water Intake (AGC Group)



● Trends in Total Wastewater Discharge (AGC Group)



● Trends in COD Discharge (AGC Group)



# Chemical Substance Management

## Fundamental Approach

As a company that manufactures and sells chemicals, the AGC Group promotes Responsible Care—a set of voluntary activities for the chemical industry that secure environment, health and safety throughout the lifecycle of chemical substances—from development through manufacture, distribution, use, disposal and recycling.



Understanding the importance of communicating with society, it also publishes the results publicly.

The AGC Group has also signed the Responsible Care Global Charter, which was revised in 2014. Looking ahead to the World Summit on Sustainable Development's 2020 goal of "Minimizing chemical substances' negative effects on people and the environment," the Group is taking measures to further improve its chemical substance management.

## Group-wide Initiatives

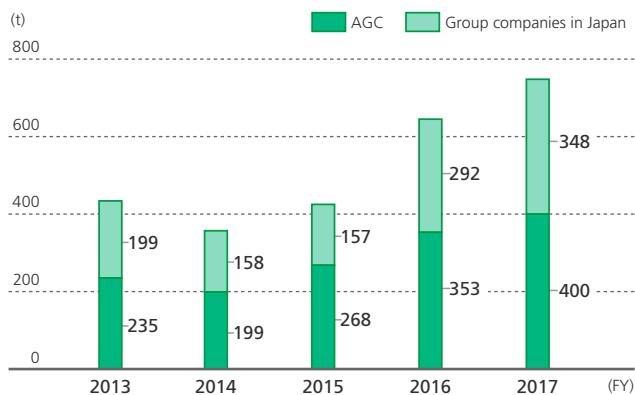
### Management of Chemical Substances

#### Initiatives at the Manufacturing Phase

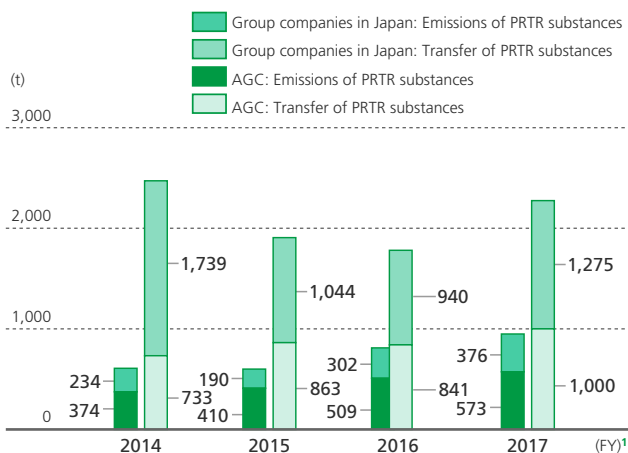
The AGC Group observes laws and regulations related to the management of chemical substances, and has established the AGC Group Chemical Substance Management Guidelines. The Group also voluntarily promotes management and risk assessment of chemical substances used at each manufacturing site, and appoints chemical substance managers. Through an in-house Chemical Substance Registration System, all chemical substances are closely registered and managed by the Group, including those that are not regulated by law yet can still cause environmental pollution or health damage.

Additionally, the AGC Group is working to reduce emissions of target substances of the PRTR Law used in manufacturing processes at all its Japanese business sites.

#### Changes in Volatile Organic Compound (VOC) Emissions (AGC Group in Japan)



#### Emissions and Transfer Volume of Substances Regulated by the PRTR Act



1 Target period: April to March

### Initiatives at the Transportation Phase

The AGC Group sites in Japan utilizes a “Yellow Card” in accordance with the characteristics of chemical substances and products in a transportation load to share emergency measures to all involved parties. This card has been prepared for each product and variety, with 104 types issued as of the end of March 2019. In addition, the Group has created a “Container Yellow Card” for use in container labeling.



Yellow Cards used by the AGC Group

### Initiatives at the Use/Disposal Phase

The AGC Group issues SDS (Safety Data Sheets) for each of its products.<sup>1</sup> In addition to Japanese, they are also created in English, Chinese, Korean, Malay and other languages for customers using the Group's products worldwide. They provide information such as correct handling methods during product use/disposal, and environmental and health effects. The Group is also developing an SDS operation and management system in countries and regions other than Japan, and related work has already started in Europe, China and the United States.

In addition, a Globally Harmonized System of Classification and Labeling of Chemicals (GHS)<sup>2</sup> indication label is created in Japanese, English and Chinese. The Group is also developing other languages according to the specifications of the export destination country.

- 1 A sheet with information regarding a chemical's characteristics and handling methods, provided to a recipient of chemicals before receipt of the chemicals themselves.
- 2 A system for global harmonization in classification and labeling of chemical products.

#### ● Number of SDS issued (as of March 31, 2019)

	March 2018	March 2019
Japanese version	1,972 types	1,977 types
English version	1,111 types	1,165 types
Chinese version	199 types	216 types

### Registration of Chemical Substances Contained in Products

Chemical substances contained in our products must be registered in accordance with the laws not only in Japan, but also of the countries to which the products will be exported.

In response to the EU's REACH, the Group completed the registration of all chemical substances that needed registration by 2018.

### Proper Management and Treatment of Asbestos

The AGC Group completed the removal of friable asbestos in 2008. The Group also appropriately manages non-friable asbestos.

### Proper Management and Treatment of PCBs

Under Japanese law, all PCBs need to be appropriately disposed by March 2027.

Accordingly, AGC discontinued the use of electric devices that contained highly-concentrated PCBs in 2005, and did so in Japanese business sites in 2009.

At present, these devices are stored according to the legislation, and the treatment, which has been entrusted to the Japan Environmental Storage & Safety Corporation (JESCO), has been moving forward. The AGC Group will continue to systematically dispose of low concentration PCBs.



### Management of Mercury

In October 2013, the Minamata Convention on Mercury was adopted by the United Nations, and the stipulations came into effect on August 16, 2017.

The AGC Group conducted a survey to understand the current state of inclusion and use of mercury, not only in its own manufacturing processes, but across its entire supply chain. The results show that although mercury is still used to some extent in measurement, including porosimeters and other measuring equipment, such use is allowed under proper control, even after the above Convention came into effect. In these instances, given that substitute products are unavailable, it was clarified that such use is unlikely to cause operational problems. Additionally, mercury products that are approved are used in compliance with laws and regulations, and will be replaced with substitutes wherever possible.

## Air Pollution Prevention

### Fundamental Approach

When the AGC Group burns heavy oil, natural gas and other substances in the glass manufacturing process, SOx, NOx, soot and dust are discharged. Due to rapid economic development, environmental air pollutant emissions are on the rise, and issues such as acid rain and transboundary pollution are becoming more prevalent on a global scale. In order to respond to such problems, the AGC Group is working hard to reduce environmental air pollutant emissions.

### Group-wide Initiatives

#### Reducing Environmental Air Pollutants from Business Activities

To reduce environmental air pollutants, the AGC Group is upgrading current exhaust gas treatment facilities, installing new ones, and making improvements in measurement and analysis techniques at each of its business sites. To further promote emission reduction measures, the Group calculates annual emission levels and shares successful examples of methods for general improvement and emission reduction throughout the Group.

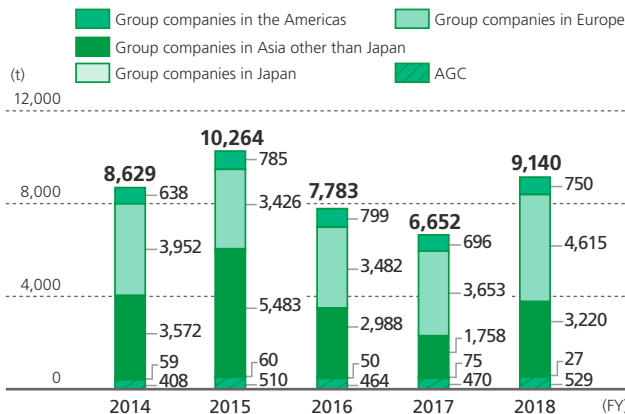
### Initiatives at Individual Companies

#### Complying with Regulations on SOx, NOx, Soot and Dust Emissions (China)

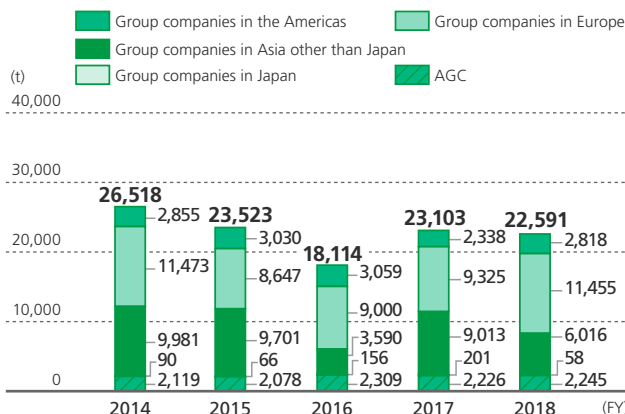
On a global scale, environmental regulations are tightening every year. This is particularly true in China, where in 2014 NOx emissions were added to the country's glass furnace emission regulations. AGC Flat Glass (Dalian) Co., Ltd. and AGC Automotive (Suzhou) Co., Ltd. monitor NOx emissions while implementing measures to reduce emissions and conform to all regulations, including those for NOx, SOx, soot and dust.

Further, in 2015 after an amendment of environmental protection laws for the first time in 27 years in China, environmental regulations in regard to atmosphere, water and soil pollution, waste matter, chemical substances, and pre-construction assessment have all been strengthened considerably. In line with these developments, AGC Group manufacturing sites in China have strengthened their exhaust gas treatment through additional desulfurization and denitration equipment, installed online monitoring equipment and upgraded to equipment that makes gas conversion possible. Through cooperation with local governments, the AGC Group in China has implemented environmental countermeasures to clear the strict new regulations.

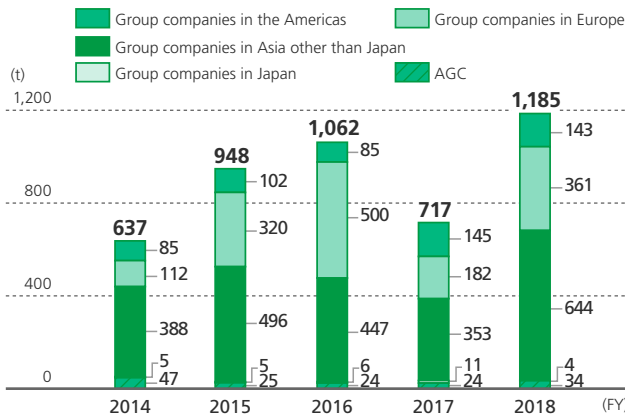
#### SOx Emissions (AGC Group)



#### NOx Emissions (AGC Group)



#### Soot and Dust Emissions (AGC Group)



## Prevention of Soil and Groundwater Contamination

### Fundamental Approach

Soil and groundwater contamination not only greatly impacts the environment, ecosystems and the health of local residents—assessing the situation and rectifying it also requires incredible time and expense for all parties involved. Truly, the effects of this manner of contamination are almost immeasurable. For this reason, the AGC Group has gone above measures required by law, establishing the Guidelines for Prevention of Soil and Groundwater Contamination to preemptively prevent all forms of soil and groundwater contamination.

### Group-wide Initiatives

#### Preventing Pollution on the Basis of Our Own Guidelines

The AGC Group's Guideline for Prevention of Soil and Groundwater Contamination discloses information on standards for storage and handling of hazardous substances, storage tank management, wastewater and rainwater management, and countermeasures in the event of soil or groundwater contamination.

The AGC Group works to prevent the spread of known pollutants, decontaminate polluted sites, and report relevant progress to administrative agencies, disclosing relevant information on its website and elsewhere.

## Sustainable Use of Resources

### Fundamental Approach

The AGC Group promotes its 3R (Reduce, Reuse, Recycle) waste disposal policy as the foundation of environmental activities across the Group. As a result, the Group continues to reduce the amount of waste that is destroyed and promote sustainable resource usage. By reusing glass cullet and disposable waste from cities as raw materials to the extent possible, the Group is reducing its natural resource consumption.

### Group-wide Initiatives

#### Promotion of Zero-landfill (waste)

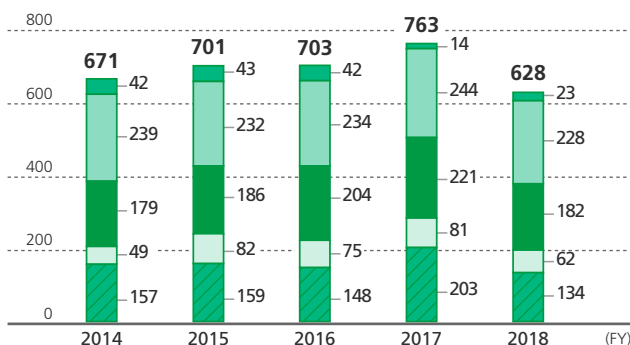
The AGC Group is promoting Zero-landfill (waste)<sup>1</sup> across the globe, with the goal of achieving Group-wide Zero-landfill (waste) status by 2020. In addition to reducing the amount of waste generated and perfecting the sorted collection process, the Group is making steady progress in the recycling of waste based on the legal systems of individual countries and regions.

<sup>1</sup> Zero-landfill (waste) is defined as recycling more than 99% of waste.

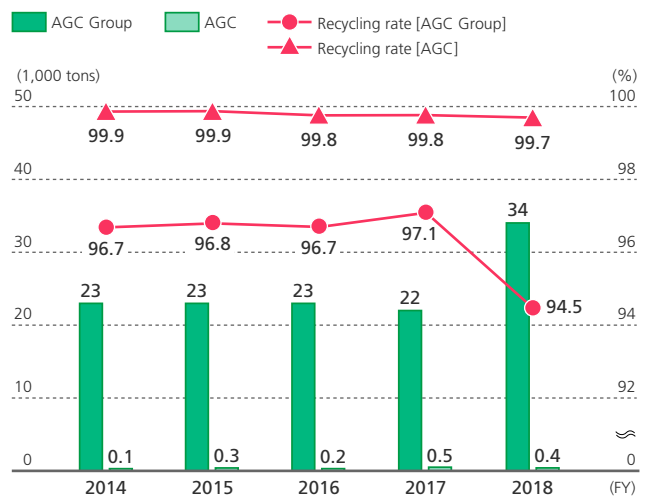
#### ●Total Waste Generation (AGC Group)

Group companies in the Americas    Group companies in Europe  
 Group companies in Asia other than Japan  
 Group companies in Japan    AGC

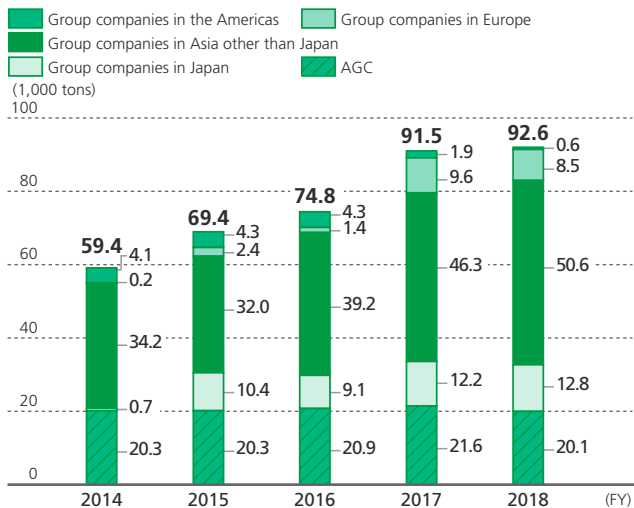
(1,000 tons)  
 1,000



#### ●Waste Landfill and Recycling Rates



● Amount of Hazardous Waste Generation (AGC Group)



A large amount of byproduct oil is generated during the manufacturing process for chemical products. As this oil contains hazardous substances such as chlorine and fluorine, it is disposed of using designated equipment. equipment includes incinerators that incorporate special boilers to recover heat in the disposal process, contributing to energy-saving initiatives. In accordance with the Waste Disposal Law, AGC receives full permission for its industrial waste oil disposal facilities, appropriately managing and inspecting them under guidance from administrative authorities.

Reducing Usage of Natural Resources

The AGC Group is part of an industry that processes natural resources such as silica sand to provide materials for final products. In order to effectively use the planet's limited natural resources and to achieve sustainable growth, the AGC Group has established utilization ratio targets for recycled resources.<sup>1</sup> Also, efforts are made to recover used products and reuse them as raw materials.

<sup>1</sup> Used goods and by-products that are useful and can be used as raw materials

Use of Glass Cullet

In the glass manufacturing process, the Group uses glass cullet as a substitute for raw materials such as silica sand. In addition to the glass ends generated during the manufacturing process, the Group also collects used glass from cities for reuse as a raw material to the greatest extent possible.

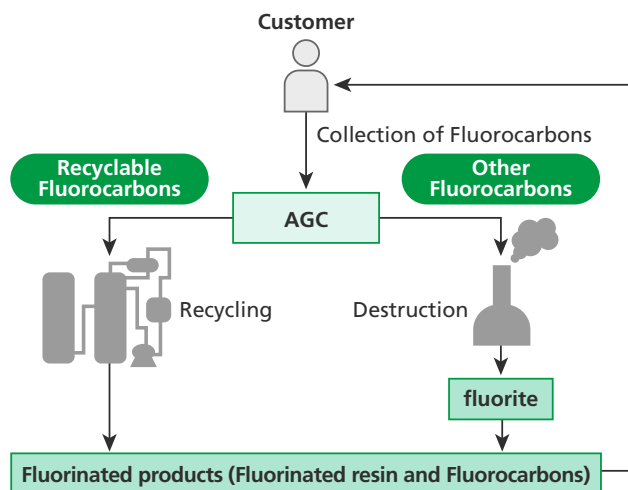
Recovery and Recycling of Fluorocarbons and Calcium Fluoride

In the Chemicals businesses, the AGC Group manufactures various fluorinated products such as alternatives for chlorofluorocarbons (HCFC, HFC) and hydrofluoric acid. Calcium fluoride (fluorite) is a natural resource used as raw material for these fluorinated products, but deposits and producing countries are limited, and most Japanese enterprises, including the AGC Group, largely depend on imports from China.

Since 1997, the AGC Group in Japan has been recovering used fluorocarbon products from customers, then destroying and recycling them at the AGC Chiba Plant. In 2018, fluorocarbons equivalent to approximately 1.40 million tons of CO<sub>2</sub> (approximately 1.61 million tons in 2017) were collected and destroyed. The calcium fluoride (fluorite) recovered through the destruction process is reused as raw material.

Also, at the same plant, calcium fluoride (fluorite) is recovered and reused from waste fluid generated in the manufacturing process. Furthermore, after customers use hydrofluoric acid in the wastewater treatment process, the Group recovers and reuses the waste calcium fluoride generated.

● Recovery and Recycling of Fluorocarbons



## Biodiversity Conservation

### Fundamental Approach

Through the AGC Group Environment Policy, the AGC Group declares its commitment to contributing to a sustainable society as a leading player in the global Materials Industry, efficiently utilizing limited resources and energy, and taking into account its impact on the natural environment, including climate change and biodiversity.

AGC is also a promoting partner of the Nippon Keidanren (Japan Business Federation) Declaration of Biodiversity. The Group has been contributing to biodiversity through atmosphere and water-based environmental conservation activities and others to reduce stress placed on the environment. Through endorsement of the goals of the seven principles of the Nippon Keidanren (Japan Business Federation) Declaration of Biodiversity, the AGC Group has made a concrete commitment to support biodiversity through its business activities.

### Group-wide Initiatives

#### Promotion of Corporate Activities that Support Biodiversity

The AGC Group has formulated a document entitled Consideration for Biodiversity, which it uses to share important criteria regarding biodiversity across the corporate activities of the Group.

In accordance with these criteria, activities that take local characteristics into account are carried out at each business site. These include restoration of coral reef through the use of AGC products in Indonesia, and initiatives in Japan towards Satoyama conservation (bamboo forest thinning).



Employees from the Chiba Plant and the Tokyo metropolitan area volunteer at the Satoyama conservation event (bamboo forest thinning)



Employees from Indonesia's P.T. Asahimas Chemical (ASC) work to restore coral reef in collaboration with the Indonesian Foundation for Biodiversity (KEHATI)



## Environment, Security and Disaster Prevention Education

### Fundamental Approach

In order to reduce the risks related to environment, security and disaster prevention, and improve the level of related activities, the AGC Group believes that individual employees should have the competence necessary to carry out respective duties. Based on this understanding, the Group clarifies the abilities necessary for business execution in each division and works to improve them through environmental, security and disaster prevention education.

### Group-wide Initiatives

#### Training for Environment Officers

In order to reliably respond to environmental regulations that are being strengthened year by year, the AGC Group in Japan's Environmental Group within the Environment, Safety and Quality's Environmental Division trains environment officers at each division and site to address new environmental regulations as necessary. In 2018, the AGC Group's General Division gave employees from the Environmental, General Affairs and Equipment Technology Divisions training on the revised Soil Contamination Countermeasures Act.

#### ● Major Initiatives on Corporate Education for Environment, Safety and Quality

Year	Content
2015	Strengthened mercury regulations, fluorinated product regulations
2016 2017	Adopted 2015 ISO14001 regulations
2018	Revised of IAF (International Accreditation Forum, Inc.) standards for the purpose of ISO14001 examination and certification

#### Training for Internal EMS Auditors

As respective business divisions handle totally different raw materials and facilities, in principle the AGC Group clarifies and provides the necessary environmental, security and disaster prevention training based on the division in question. However, as the quality of internal audits contributes to the continuous improvement of the Group's management, the Group also conducts a proprietary group training program at the AGC Monozukuri Training Center.

As the AGC Group transitioned to the 2015 edition of ISO 14001, it implemented e-learning training for 500 global EMS internal auditors based on the new requirements and stipulations therein.

#### Training Personnel Specialized in Environmental Fields

The Group uses its proprietary human resources database "Skill Map" (see page 36) to cultivate human resources with environmental management skills. Since 2011, the Group has organized meetings, lectures and field trips five to six times a year, allowing its employees to deepen their knowledge on recent environmental trends and environmental management technologies.

Originally, this initiative mainly targeted head office employees responsible for environmental issues. However, from FY2016, environmental officers at each plant are included in the training. Those concerned will visit other plants, sharing methods of environmental management, exemplary case studies, problems at the plant and relevant solutions. Through this training, the Group is solidifying the abilities of each person in charge, and the level of environmental management at each plant.

#### Training in Security and Disaster Prevention

The AGC Group is working to raise the level of disaster prevention and security at each site through emergency drills and training for personnel in charge of disaster prevention. In 2018, the Group hosted study meetings for Japanese Group employees in related divisions on security and disaster prevention, and soil and groundwater contamination prevention, including educational business site visits in two locations. These initiatives boosted employee's skills as well as plant disaster prevention and security management levels.

### Initiatives at Individual Companies

#### Non-technical Skill Education

Analysis of the cause of chemical plant incidents in recent years indicates that situational awareness, communication, leadership, the courage to speak up or say something, customary review, overcoming an authority gradient, etc., are all human factors that can lead to error. In order to establish security, non-technical skills related to these issues are imperative.

The AGC Chiba Plant has been conducting non-technical skill education since 2005. In 2018, under the theme of "Preventing incidents with kind words," training was carried out on controlling workplace trouble that stems from a lack of communication. A total of 1,199 employees participated, with positive responses including, "This session made me consider if my words are really getting across to my team members while we work," and "I now truly understand the importance of whether my words are being understood by my team members during the course of a work day."

## Reducing Environmental Impact throughout Product Life Cycles

### Fundamental Approach

The AGC Group evaluates its environmental impact not only during the manufacturing process, but throughout all product stages, including raw material procurement, sales, logistics, use and disposal, aiming to reduce a product's environmental burden through its lifecycle. The Group has also formulated a corporate motto for CO<sub>2</sub> emissions in 2020, aiming for an offset of six times its annual CO<sub>2</sub> emissions emitted during manufacturing by the same year—made possible through its energy-saving and energy-creating products.

### Third Party Certification for Environmental Products

By providing information on products' environmental impact throughout their life cycle, the Group enables its customers to preferentially purchase eco-friendly products.

The AGC Group acquires third party certification for its environmental products. For example, AGC Glass Europe (AGEU) voluntarily issues environment-related third party certifications (Environmental Product Declarations, EPD) on select products.

### Group-wide Initiatives

#### Development and Provision of Environmental Products

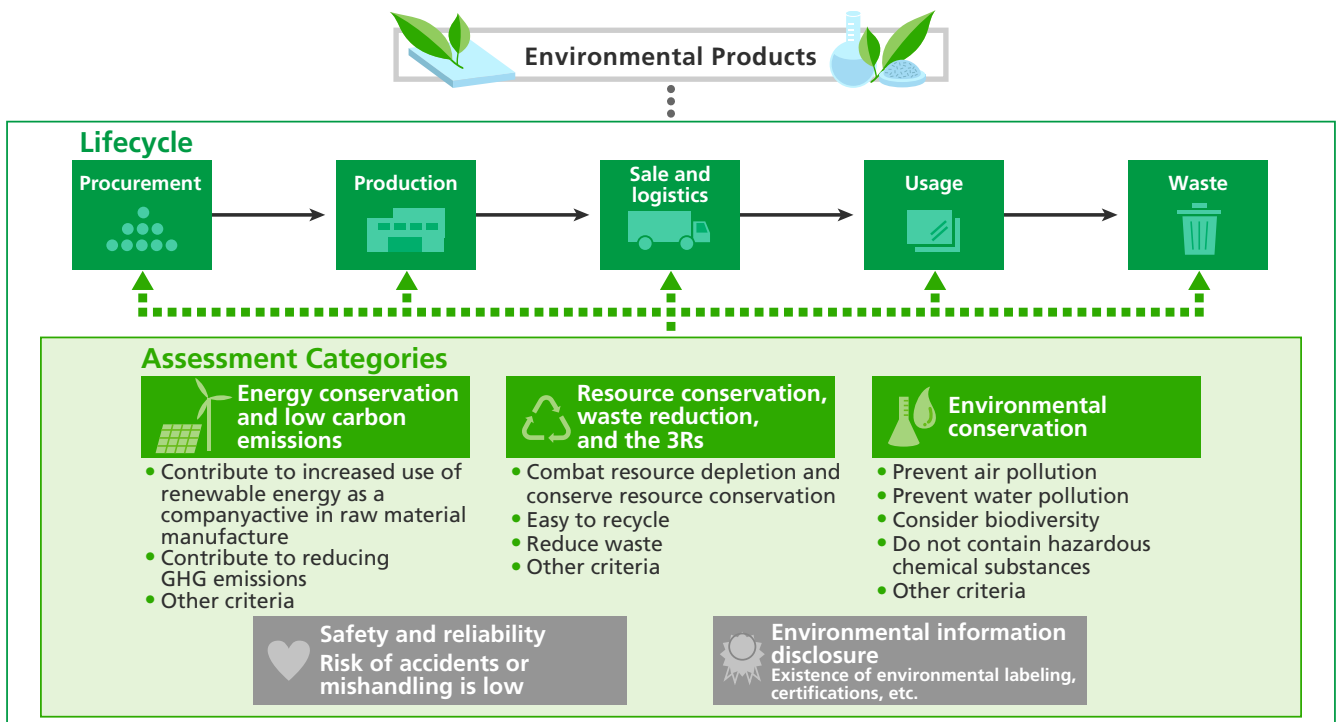
Guided by the AGC Group Basic Environmental Policy, the AGC Group strives to develop and provide environmental products, technologies, services, and installation techniques in consideration of their impact on the environment.

Specifically, products conforming to the AGC Group Environmental Product Guidelines are selected as environmental products. The Group promotes product development based on these Guidelines and, at each stage of product lifecycle, evaluates products in three categories: (1) energy conservation and low carbon emissions, (2) resource conservation, waste reduction and the 3 Rs and (3) environmental conservation. Furthermore, products are assessed for their suitability as environmental products in light of product safety, security and environmental information disclosure.



EPD Certifications

#### ●The Environmental Product Selection Process



## Environmentally Conscious Product Design

### Main Environmental Products

#### Energy-Saving Architectural Glass

##### [Eco-Glass \(Low-E Double Glazing Glass\)](#)

Energy-Saving Glass with Excellent Heat Insulation and Thermal Shielding for Improving the Efficiency of Cooling and Heating

##### [WINDOOR™ Refrigerator and Freezer Display Doors](#)

High Insulation Efficiency Refrigerator and Freezer Display Doors that Provide Excellent Energy Savings

#### Automotive Glass

##### [Coolverre™/UV Verre Premium Cool on™/UV Verre Premium Privashield™ \(Energy-Saving Glass for Automobiles\)](#)

Glass that Blocks Infrared and Ultraviolet Rays to the Benefit of Vehicle Drivers and the Global Environment

#### Glass for Solar Power Generation

##### [Sunjoule™ Glass with Built-In PV Modules](#)

Large-scale Module and Lighting-compatible Clean and Green Solar Power Generation System Using Laminated Glass

##### [Sunmax™ Premium \(Extra-Clear Glass\)](#)

Extremely Clear, Highly Reliable Glass, the Product of Choice for Photovoltaic Modules and Solar Mirrors

#### Fluorochemicals (Film / Coating Materials / Refrigerants)

##### [Fluon® ETFE FILM \(Fluoropolymer Film\)](#)

A Versatile Fluoropolymer Film Offering Numerous Advantages Including Heat Resistance, Durability, Light Permeability, and Non-Flammability

##### [Lumiflon™ \(Fluoropolymer for Coating\) / Bonnflon™ Sunbarrier \(Heat-Reflective Fluorinated Resin\)](#)

Fluorinated Resin Coating Materials that Contribute to Reducing CO<sub>2</sub> Emissions over the Lifecycle

##### [HFO- 1234yf, from the AMOLEA™ Series of Next-generation Refrigerants with Low Environmental Impact](#)

Retains HFO- 1234yf Performance while Maintaining a Lower Global Warming Effect than Existing Products

#### Other Chemical Products

##### [ACLESYA™ Highly Reactive Gas Emissions Neutralizeropen window](#)

Neutralizes HCL and SO<sub>x</sub> in Gas Emitted by Garbage Incinerators, Greatly Reducing Pollutants Released into the Atmosphere

##### [ExcenoI™ Urethane Material](#)

A Urethane Foam Material that Provides Superior Insulation without Using Freon Gas, which Has a High Global Warming Coefficient

#### Fuel Cell-Related Materials and Components

##### [Flemion™ \(Fluoropolymer Ion-Exchange Membrane\)](#)

Realizing Significant Energy Savings in the Production of Caustic Soda

#### Heat-shielding Paving Materials

##### [Tough Coore™ \(Heat-shielding Materials for Pavements\)](#)

Designed to Alleviate the Heat Island Effect

## Industrial Safety and Security

### Fundamental Approach

The AGC Group recognizes the importance of industrial safety and security activities. Therefore, the AGC Group Basic Industry Safety & Security Policy to promote various issues surrounding industrial safety and security was set.

#### AGC Group Industrial Safety & Security Policy

(Established on February 7, 2003 and revised on January 1, 2019)

At AGC Group we will pursue our **“Look Beyond”** Vision with the strong belief that “actively engaging in security and disaster prevention activities is our fundamental obligation as a company developing business in the local community”

We commit to adhere to the following key principles:

1. Comply with relevant internal and external rules concerning industrial safety & security rules worldwide.
2. Develop and continuously improve management initiatives to prevent incidents associated with industrial safety & security.
3. Strive to communicate with internal and external stakeholders proactively.

### Management Structure

In addition to striving to prevent accidents and other crises (unforeseen accidents), the AGC Group is working under the AGC Group Basic Industry Safety & Security Policy to prevent the escalation of accidents that do occur by promoting countermeasures to deal promptly and accurately with such crises.

The Group incorporates industrial safety and security activities into its integrated Environmental Management System (EMS) and promotes risk reduction and preventive measures by applying the Plan-Do-Check-Act (PDCA) cycle.

Each business division will promote fire prevention, countermeasures for industrial safety accidents and risk assessment for natural disasters based on action plans drawn up for that year by the corporate Environment, Safety and Quality Division. In addition to these, the Group will strive for continuous improvement through internal audits that monitor the extent to which the above measures have been carried out.

### Group-wide Initiatives

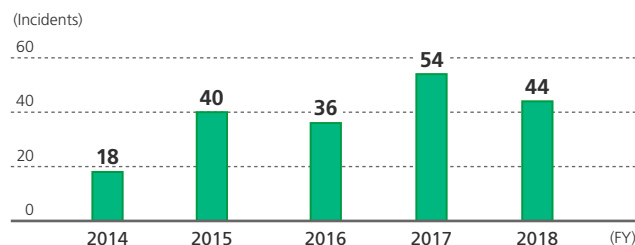
#### Preventing Accidents through Pre-assessment in Facility Development

When constructing, expanding or modifying facilities that are determined to be liable for risk, the Group conducts industrial safety and security-related risk assessment and confirms the intrinsic safety of the facility based on the Group's Prior Safety Assessment System. This occurs at the design stage and also during test operations when construction is completed. In addition, when safety assessment at a chemical plant indicates a high level of danger, a risk assessment is carried out using HAZOP or other means.

#### Prevention of Fire and Prevention of Reoccurrence

The AGC Group is working to continually improve fire prevention activities at domestic and overseas sites through environmental safety preservation audits conducted by each business division and the Environment, Safety and Quality Division. In 2018, 44 fires broke out at Group sites. However, by quick initial response measures, none of them led to serious incidents.

#### ●Trend in the Number of Fires<sup>1</sup> (AGC Group)



<sup>1</sup> Fires included in the total figures are those that required fire extinguishing, from small fires put out with a single fire extinguisher to larger fires put out by a municipal fire department.

#### Prevention of Security Incidents

To strengthen risk reduction and precaution measures related to environmental and industrial safety and security, the AGC Group launched the Serious Accident Eradication Project and identified high risk issues related to leaks and explosions of molten glass and chemical substances. The Group has also enacted countermeasures, aiming to reduce the risk of accidents involving leaks, fires and explosions involving molten glass and chemical substances, which are the main theme of the project.

#### Education and Training for Security Incidents

When an industrial safety and security incident occurs, it is necessary to minimize the impact on employees and communities.

The AGC Group conducts disaster education and training at its business sites. In addition to disaster drills based on a hypothetical earthquake or fire at the headquarters, group-based training is carried out at the headquarters annually to prepare for a serious incident or natural disaster.



Disaster training at AGC headquarters



## Independent Assurance Report

To the President and CEO of AGC Inc.

We were engaged by AGC Inc. (the “Company”) to undertake a limited assurance engagement of the GHG emissions marked with a star ★ (the “Indicators”) for the period from January 1, 2018 to December 31, 2018 included in its Sustainability Databook 2019 (the “Report”) for the fiscal year ended December 31, 2018.

### The Company’s Responsibility

The Company is responsible for the preparation of the Indicators in accordance with its own reporting criteria (the “Company’s reporting criteria”), as described in the Report.

### Our Responsibility

Our responsibility is to express a limited assurance conclusion on the Indicators based on the procedures we have performed. We conducted our engagement in accordance with the ‘International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements other than Audits or Reviews of Historical Financial Information’ and the ‘ISAE 3410, Assurance Engagements on Greenhouse Gas Statements’ issued by the International Auditing and Assurance Standards Board. The limited assurance engagement consisted of making inquiries, primarily of persons responsible for the preparation of information presented in the Report, and applying analytical and other procedures, and the procedures performed vary in nature from, and are less in extent than for, a reasonable assurance engagement. The level of assurance provided is thus not as high as that provided by a reasonable assurance engagement. Our assurance procedures included:

- Interviewing the Company’s responsible personnel to obtain an understanding of its policy for preparing the Report and reviewing the Company’s reporting criteria.
- Inquiring about the design of the systems and methods used to collect and process the Indicators.
- Performing analytical procedures on the Indicators.
- Examining, on a test basis, evidence supporting the generation, aggregation and reporting of the Indicators in conformity with the Company’s reporting criteria, and recalculating the Indicators.
- Visiting the Company’s Chiba plant selected on the basis of a risk analysis.
- Evaluating the overall presentation of the Indicators.

### Conclusion

Based on the procedures performed, as described above, nothing has come to our attention that causes us to believe that the Indicators in the Report are not prepared, in all material respects, in accordance with the Company’s reporting criteria as described in the Report.

### Our Independence and Quality Control

We have complied with the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which includes independence and other requirements founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior. In accordance with International Standard on Quality Control 1, we maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

*KPMG AZSA Sustainability Co., Ltd.*

KPMG AZSA Sustainability Co., Ltd.

Tokyo, Japan

July 5, 2019



# GRI Standards Index

This Sustainability Data Book 2019 is a tool for non-financial information disclosure (sustainability reporting), and is based on the Core option of the GRI Standards.

Material aspects (material aspects for AGC Group: material issues) are selected based on CSR monitoring mechanisms that employ ISO26000. The management methods for each disclosed issue are given on the corresponding material issues page.

## Core Option Criteria for the GRI Standards.

- Disclosing all General Standard Disclosures which are required for Core option
- Disclosing at least one Indicator related to each identified material aspect (material issue)

## General Disclosures (core)

Only General Standard Disclosures required for Core option have been included.

### 1. Organizational profile

GRI Standards	Requirements	Page listed
<b>GRI 102: General Disclosures</b>	102-1 Name of the organization	<b>AGC Integrated Report 2019 (P.67) Company Profile</b>
	102-2 Activities, brands, products, and services	<b>AGC Integrated Report 2019 (P.18-42) Company Profile</b>
	102-3 Location of headquarters	<b>AGC Integrated Report 2019 (P.67) Company Profile</b>
	102-4 Location of operations	<b>Our Network</b>
	102-5 Ownership and legal form	<b>AGC Integrated Report 2019 (P.55-59) Corporate Governance</b>
	102-6 Markets served	<b>AGC Integrated Report 2019 (P.18-42) Company Profile</b>
	102-7 Scale of the organization	<b>AGC Integrated Report 2019 (P.18-42) Financial Review (English Only)</b>
	102-8 Information on employees and other workers	<b>Sustainability Data Book 2019 (P.25) Human Resources Management Sustainability Data Book 2019 (P.32) Global Promotion of Diversity</b>
	102-9 Supply chain	<b>Sustainability Data Book 2019 (P.47) Supply Chain Sustainability Data Book 2019 (P.43) 2018 Activity Results for Material Issues Sustainability Data Book 2019 (P.47-48) Supply Chain</b>
	102-10 Significant changes to the organization and its supply chain	<b>Not applicable</b>
	102-11 Precautionary Principle or approach	<b>Financial Review (English Only) (P.9-11) Sustainability Data Book 2019 (P.18) Risk Management</b>
	102-12 External initiatives	<b>Sustainability Data Book 2019 (P.8) CSR Promotion System Sustainability Data Book 2019 (P.9) Local communities, NGOs/NPOs, Governments</b>
	102-13 Membership of associations	<b>Sustainability Data Book 2019 (P.8) CSR Promotion System Sustainability Data Book 2019 (P.9) Local communities, NGOs/NPOs, Governments</b>

## 2. Strategy

GRI Standards	Requirements		Page listed
<b>GRI 102: General Disclosures</b>	102-14	Statement from senior decision-maker	<b>CSR Top Message</b> <b>AGC plus (Video)</b> <b>AGC plus</b>

## 3. Ethics and integrity

GRI Standards	Requirements		Page listed
<b>GRI 102: General Disclosures</b>	102-16	Values, Principles, standards, and norms of behavior	<b>Sustainability Data Book 2019 (P.1-2)</b> <b>Sustainability Data Book 2019 (P.5)</b> <b>CSR and Related Policies</b> <b>Sustainability Data Book 2019 (P.21-22)</b> <b>Compliance</b>

## 4. Governance

GRI Standards	Requirements		Page listed
<b>GRI 102: General Disclosures</b>	102-18	Governance structure	<b>AGC Integrated Report 2019 (P.55-59)</b> <b>Sustainability Data Book 2019 (P.17)</b> <b>Corporate Governance</b> <b>Corporate Governance</b> <b>Sustainability Data Book 2019 (P.8)</b> <b>CSR Promotion System</b>

## 5. Stakeholder engagement

GRI Standards	Requirements		Page listed
<b>GRI 102: General Disclosures</b>	102-40	List of stakeholder groups	<b>Corporate Governance Report (P.13)</b> <b>Sustainability Data Book 2019 (P.8)</b> <b>CSR Promotion System</b> <b>Sustainability Data Book 2019 (P.9-10)</b> <b>Stakeholders</b>
	102-41	Collective bargaining agreements	<b>Sustainability Data Book 2019 (P.27-28)</b> <b>Respecting Human Rights</b>
	102-42	The basis for identifying and selecting stakeholders with whom to engage.	<b>Corporate Governance Report (P.13)</b> <b>Sustainability Data Book 2019 (P.8)</b> <b>CSR Promotion System</b> <b>Sustainability Data Book 2019 (P.9-10)</b> <b>Stakeholders</b>
	102-43	Approach to stakeholder engagement	<b>Corporate Governance Report (P.13)</b> <b>Sustainability Data Book 2019 (P.8)</b> <b>CSR Promotion System</b> <b>Sustainability Data Book 2019 (P.9-10)</b> <b>Stakeholders</b>
	102-44	Key topics and concerns raised	<b>Corporate Governance Report (P.13)</b> <b>Sustainability Data Book 2019 (P.8)</b> <b>CSR Promotion System</b> <b>Sustainability Data Book 2019 (P.9-10)</b> <b>Stakeholders</b>



## 6. Reporting practice

GRI Standards	Requirements		Page listed
<b>GRI 102: General Disclosures</b>	102-45	Entities included in the consolidated financial statements	<b>AGC Integrated Report 2019 (P.19-20) Financial Review (English Only)</b>
	102-46	Defining report content and topic Boundaries	<b>AGC Integrated Report 2019 (P.1) Sustainability Data Book 2019 (P.8) CSR Promotion System Sustainability Data Book 2019 (P.9-10) Stakeholders</b>
	102-47	List of material topics	<b>Sustainability Data Book 2019 (P.8) CSR Promotion System</b>
	102-48	Restatements of information	<b>Not applicable</b>
	102-49	Changes in reporting	<b>Not applicable</b>
	102-50	Reporting Period	<b>AGC Integrated Report 2019 (P.1)</b>
	102-51	Date of most recent report	<b>AGC Integrated Report 2019 (P.1)</b>
	102-52	Reporting cycle	<b>AGC Integrated Report 2019 (P.1)</b>
	102-53	Contact point for questions regarding the report	<b>AGC Integrated Report 2019 (Back cover) CSR-related inquiries</b>
	102-54	Claims of reporting in accordance with the GRI Standards	<b>i. Core ii. This table</b>
	102-55	GRI content index	<b>This table</b>
102-56	External assurance	<b>Financial Review (English Only) (P.68)</b>	

GRI Standards	Requirements		Page listed
<b>GRI 103: Management Approach</b>	103-1	Explanation of the material topic and its Boundary	<b>AGC Integrated Report 2019 (P.1) Sustainability Data Book 2019 (P.8) CSR Promotion System Sustainability Data Book 2019 (P.9-10) Stakeholders</b>

## Material topics

Only items that were selected as material issues for AGC Group have been included.

### Economic

GRI Standards	Requirements		Page listed
<b>GRI 201: Economic Performance</b>	201-1	Direct economic value generated and distributed	<b>Financial Review (English Only)</b>
	201-2	Financial implications and other risks and opportunities due to climate change	<b>Financial Review (English Only)</b> (P.10-11) <b>Sustainability Data Book 2019</b> (P.60) <b>Environmental Impact Sustainability Data Book 2019</b> (P.57) <b>2018 Activity Results for Material Issues Sustainability Data Book 2019</b> (P.63-67) <b>Climate Change Initiatives Products and Technologies that Contribute to Environmental Solutions</b>
	201-3	Defined benefit plan obligations and other retirement plans	<b>Financial Review (English Only)</b> (P.11)
	201-4	Financial assistance received from government	
<b>GRI 205: Anti-corruption</b>	205-1	Operations assessed for risks related to corruption	<b>Sustainability Data Book 2019</b> (P.43) <b>2018 Activity Results for Material Issues Sustainability Data Book 2019</b> (P.21-22) <b>Compliance Sustainability Data Book 2019</b> (P.44-45) <b>Fair Transactions</b>
	205-2	Communication and training about anti-corruption policies and procedures	<b>Sustainability Data Book 2019</b> (P.43) <b>2018 Activity Results for Material Issues Sustainability Data Book 2019</b> (P.21-22) <b>Compliance Sustainability Data Book 2019</b> (P.44-45) <b>Fair Transactions</b>
	205-3	Confirmed incidents of corruption and actions taken	
<b>GRI 206: Anti-competitive Behavior</b>	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	<b>Press Release Sustainability Data Book 2019</b> (P.44-45) <b>Fair Transactions</b>

### Environmental

GRI Standards	Requirements		Page listed
<b>GRI 301: Materials</b>	301-1	Materials used by weight or volume	<b>Sustainability Data Book 2019</b> (P.60-62) <b>Environmental Impact/ Environmental Management</b>
	301-2	Recycled input materials used	<b>Sustainability Data Book 2019</b> (P.75-76) <b>Sustainable Use of Resources</b>
	301-3	Reclaimed products and their packaging materials	
<b>GRI 302: Energy</b>	302-1	Energy consumption within the organization	<b>Sustainability Data Book 2019</b> (P.60-62) <b>Environmental Impact/ Environmental Management Sustainability Data Book 2019</b> (P.63-67) <b>Climate Change Initiatives</b>
	302-2	Energy consumption within the organization	<b>Sustainability Data Book 2019</b> (P.63-67) <b>Climate Change Initiatives</b>
	302-3	Energy intensity	<b>Sustainability Data Book 2019</b> (P.60-62) <b>Environmental Impact/ Environmental Management Sustainability Data Book 2019</b> (P.63-67) <b>Climate Change Initiatives</b>
	302-4	Reduction of energy consumption	<b>Sustainability Data Book 2019</b> (P.63-67) <b>Climate Change Initiatives</b>
	302-5	Reductions in energy requirements of products and services	<b>Sustainability Data Book 2019</b> (P.60-62) <b>Environmental Impact/ Environmental Management</b>

<b>GRI 303: Water</b>	303-1	Water withdrawal by source	<b>Sustainability Data Book 2019</b> (P.70-71) <b>Effective Use of Water Resources and the Prevention of Water Pollution</b>
	303-2	Water sources significantly affected by withdrawal of water	<b>Sustainability Data Book 2019</b> (P.70-71) <b>Effective Use of Water Resources and the Prevention of Water Pollution</b>
	303-3	Water recycled and reused	
<b>GRI 305: Emissions</b>	305-1	Direct (Scope1) GHG emissions	<b>Sustainability Data Book 2019</b> (P.63-67) <b>Climate Change Initiatives</b>
	305-2	Energy indirect (Scope 2) GHG emissions	<b>Sustainability Data Book 2019</b> (P.63-67) <b>Climate Change Initiatives</b>
	305-3	Other indirect (Scope 3) GHG emissions	<b>Sustainability Data Book 2019</b> (P.63-67) <b>Climate Change Initiatives</b>
	305-4	GHG emissions intensity	<b>Sustainability Data Book 2019</b> (P.60-62) <b>Environmental Impact/ Environmental Management</b> <b>Sustainability Data Book 2019</b> (P.63-67) <b>Climate Change Initiatives</b>
	305-5	Reduction of GHG emissions	<b>Sustainability Data Book 2019</b> (P.63-67) <b>Climate Change Initiatives</b>
	305-6	Emissions of ozone-depleting substances (ODS)	
	305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	<b>Sustainability Data Book 2019</b> (P.74) <b>Air Pollution Prevention</b> <b>Site Reports</b>
<b>GRI 306: Effluents and Waste</b>	306-1	Water discharge by quality and destination	<b>Sustainability Data Book 2019</b> (P.70-71) <b>Effective Use of Water Resources and the Prevention of Water Pollution</b> <b>Site Reports</b>
	306-2	Waste by type and disposal method	<b>Sustainability Data Book 2019</b> (P.60-62) <b>Environmental Impact/ Environmental Management</b> <b>Sustainability Data Book 2019</b> (P.75) <b>Sustainable Use of Resources</b> <b>Site Reports</b>
	306-3	Significant spills	<b>Not applicable</b>
	306-4	Transport of hazardous waste	
	306-5	Water bodies affected by water discharges and / or runoff	
<b>GRI 307: Environmental Compliance</b>	307-1	Non-compliance with environmental laws and regulations	<b>Press Release</b>
<b>GRI 308: Supplier Environmental Assessment</b>	308-1	New suppliers that were screened using environmental criteria	
	308-2	Negative environmental impacts in the supply chain and actions taken	<b>Sustainability Data Book 2019</b> (P.43) <b>2018 Activity Results for Material Issues</b> <b>Sustainability Data Book 2019</b> (P.47-48) <b>Supply Chain</b>

## Social

GRI Standards	Requirements		Page listed
<b>GRI 403: Occupational Health and Safety</b>	403-1	Workers representation in formal joint management - worker health and safety committees	
	403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	<b>Sustainability Data Book 2019 (P.37-40) Occupational Health &amp; Safety Site Reports</b>
	403-3	Workers with high incidence or high risk of diseases related to their occupation	<b>Sustainability Data Book 2019 (P.37-40) Occupational Health &amp; Safety Site Reports</b>
	403-4	Health and safety topics covered in formal agreements with trade unions	
<b>GRI 404: Training and Education</b>	404-1	Average hours of training per year per employee	<b>Sustainability Data Book 2019 (P.34-36) Employee Education</b>
	404-2	Programs for upgrading employee skills and transition assistance programs	<b>Sustainability Data Book 2019 (P.24) 2018 Activity Results for Material Issues Sustainability Data Book 2019 (P.34-36) Employee Education Sustainability Data Book 2019 (P.32-34) Global Promotion of Diversity</b>
	404-3	Percentage of employees receiving regular performance and career development reviews	<b>Sustainability Data Book 2019 (P.25-26) Human Resources Management Sustainability Data Book 2019 (P.34-36) Employee Education</b>
<b>GRI 408: Child Labor</b>	408-1	Operations and suppliers at significant risk for incidents of child labor	<b>Sustainability Data Book 2019 (P.24) 2018 Activity Results for Material Issues Sustainability Data Book 2019 (P.27-28) Respecting Human Rights</b>
<b>GRI 409: Forced or Compulsory Labor</b>	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	<b>Sustainability Data Book 2019 (P.24) 2018 Activity Results for Material Issues Sustainability Data Book 2019 (P.27-28) Respecting Human Rights</b>
<b>GRI 414: Supplier Social Assessment</b>	414-1	New suppliers that were screened using social criteria	
	414-2	Negative social impacts in the supply chain and actions taken	<b>Sustainability Data Book 2019 (P.43) 2018 Activity Results for Material Issues Sustainability Data Book 2019 (P.47-48) Supply Chain</b>
<b>GRI 416: Customer Health and Safety</b>	416-1	Assessment of the health and safety impacts of product and service categories	<b>Sustainability Data Book 2019 (P.52-54) Quality Assurance</b>
	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	<b>Sustainability Data Book 2019 (P.52-54) Quality Assurance</b>
<b>GRI 417: Marketing and Labeling</b>	417-1	Requirements for product and service information and labeling	<b>Sustainability Data Book 2019 (P.72) Chemical Substances Management</b>
	417-2	Incidents of non-compliance concerning product and service information and labeling	<b>Sustainability Data Book 2019 (P.72) Chemical Substances Management</b>
	417-3	Incidents of non-compliance concerning marketing communications	
<b>GRI 419: Socioeconomic Compliance</b>	419-1	Non-compliance with laws and regulations in the social and economic area	<b>Press Release Sustainability Data Book 2019 (P.21-22) Compliance</b>