



CSR Activity Report  
(Detailed)

2018

## Editing Policy Contents

The CSR Activity Report (Detailed) complements the non-financial aspect (Sustainability Reporting) of the AGC Report 2018, in which the AGC Group publishes its business strategies and business activities to a broad audience. In addition to non-financial data, individual policies, promotional structures, activity goals and achievements are reported in regards to the Group's CSR activities.

To facilitate easy access to the activity topics and related information presented on the CSR website, this report is organized into chapters centered on version 4.0 of the Sustainability Reporting Guidelines (G4). The content has been edited for easy access to related activities introduced on the CSR website. It should be read together with the CSR website in order to foster a deeper understanding of the social responsibility activities implemented by the AGC Group.

## Scope of This Report

### • Reporting Period

2017 (Jan.–Dec. 2017)

Some information includes content from both 2016 and 2018

### • Organizations Covered in the Report

AGC and its 210 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 Inc.

#### • 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: June 2018 (Last date of publication: July 2017)

English version: August 2018 (Last date of publication: July 2017)

## Regarding Future Assumption, Forecasts and Plans

Future perspectives described in the CSR Activity Report (Detailed) 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.

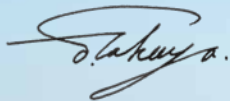
Company name was changed to AGC Inc. on July 1, 2018

## Contents

|   |           |
|---|-----------|
| <b>Message from the President and CEO</b> .....                               | <b>2</b>  |
| <b>Overview of the AGC Group</b> .....  | <b>3</b>  |
| <b>CSR at the AGC Group</b>   |           |
| • CSR and Related Policies.....   | 5         |
| • CSR Promotion System.....   | 7         |
| • Stakeholders.....   | 8         |
| • Customers.....  | 10        |
| • Shareholders and Investors.....   | 12        |
| • Employees.....  | 13        |
| • Local communities, NGOs/NPOs, Governments.....                              | 13        |
| • Key topics for “CSR at the AGC Group”.....                                  | 14        |
| <b>Organizational Governance</b>  |           |
| • 2017 Activity Results for Material Issues.....                              | 16        |
| • Corporate Governance.....   | 17        |
| • Risk Management.....  | 18        |
| • Internal Audits.....  | 19        |
| • Compliance.....   | 21        |
| <b>Human Rights and Labor</b>   |           |
| • 2017 Activity Results for Material Issues.....                              | 24        |
| • Human Resources Management.....   | 25        |
| • Respecting Human Rights.....  | 27        |
| • Raising Employee Job Satisfaction and Pride (ES).....                       | 28        |
| • Work-Life Balance.....  | 30        |
| • Global Promotion of Diversity.....  | 32        |
| • Employee Education.....   | 34        |
| • Occupational Health & Safety.....   | 37        |
| • Creating a Comfortable Workplace.....                                       | 41        |
| • Key topics for “Human Rights and Labor”.....                                | 42        |
| <b>Society</b>  |           |
| • 2016 Activity Results for Material Issues.....                              | 47        |
| • Fair Transactions.....  | 48        |
| • Respect for Intellectual Property Rights.....                               | 49        |
| • Maintaining Information Security.....                                       | 50        |
| • Supply Chain.....   | 51        |
| • Social Contribution Activities.....   | 53        |
| • Key topics for “Society” (Social Contribution Activities).....              | 54        |
| <b>Product Responsibility</b>   |           |
| • 2017 Activity Results for Material Issues.....                              | 59        |
| • Quality Assurance.....  | 60        |
| • Product Safety Initiatives.....   | 61        |
| • Pursuit of Customer Satisfaction (CS).....                                  | 63        |
| <b>Environmental</b>  |           |
| • 2017 Activity Results for Material Issues.....                              | 65        |
| • Environmental Management.....   | 66        |
| • Environmental Impact.....   | 68        |
| • Environmental Accounting.....   | 70        |
| • Response to Climate Change.....   | 71        |
| • Examples of Energy Conservation Activities.....                             | 74        |
| • Effective Use of Water Resources and the Prevention of Water Pollution..... | 76        |
| • Chemical Substances Management.....   | 78        |
| • Air Pollution Prevention.....   | 80        |
| • Prevention of Soil and Groundwater Contamination.....                       | 81        |
| • Sustainable Use of Resources.....   | 81        |
| • Biodiversity Conservation.....  | 83        |
| • Environment, Safety & Security Education.....                               | 83        |
| • Reducing Environmental Impact throughout Product Life Cycles.....           | 84        |
| • Environmentally Conscious Product Design.....                               | 85        |
| • Industrial Safety & Security.....   | 86        |
| • Key topics for “Environmental”.....   | 87        |
| • Independent Assurance Report.....   | 95        |
| <b>GRI Index</b> .....  | <b>96</b> |

## Message from the President and CEO

Contributing to Sustainable Development  
to Help Ensure a Bright Future for our Planet



Takuya Shimamura  
Representative Director, President and Chief Executive Officer



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.

This CSR Activity Report (Detailed) showcases the AGC Group’s interaction with its stakeholders and the Group’s CSR initiatives.

For more than 100 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.

[!\[\]\(5361750c22c4e047a52f4eac1ec2d4cc\_img.jpg\) Click here to watch a video about the AGC Plus management policy \(about two and a half minutes in length\)](#)

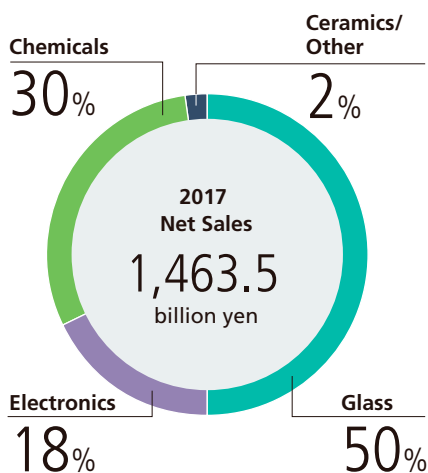
# Overview of the AGC Group

## Business Overview

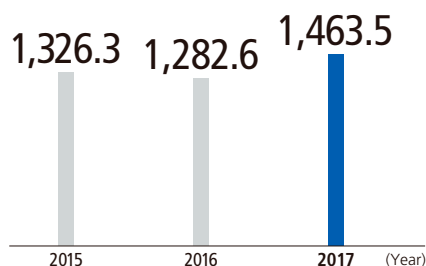
The AGC Group's business extends into four fields: glass, electronics, chemicals and ceramics. Through world-leading technologies and expertise the Group has developed over a century of technological innovation, it provides a diverse lineup of products for customers across a wide range of industries. 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>1</sup>



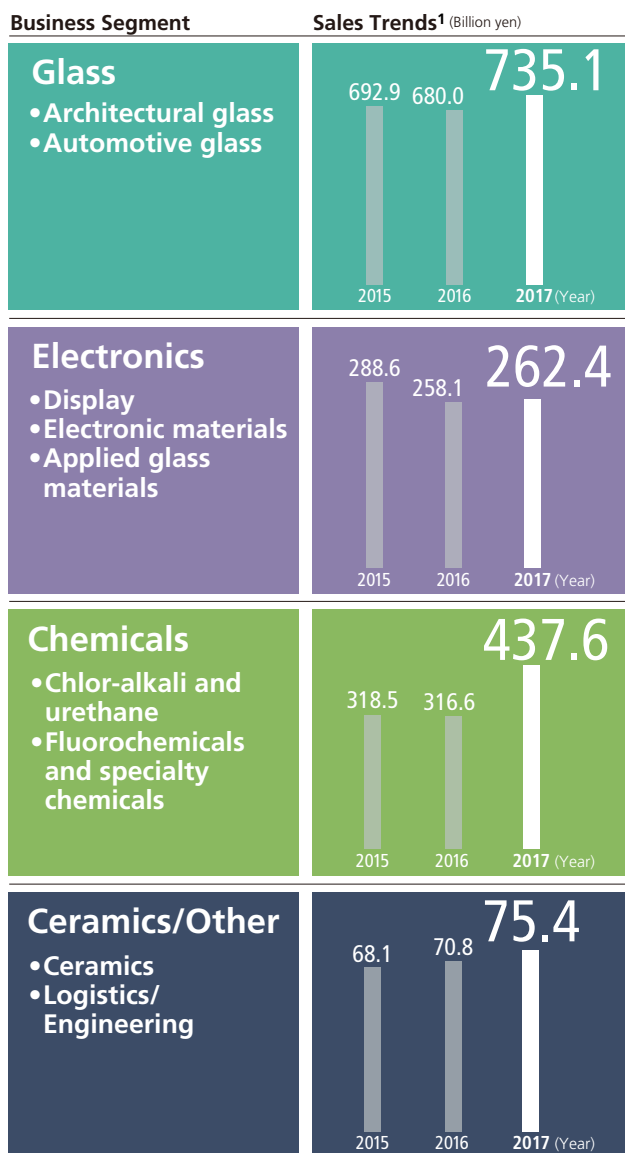
### ● Sales Trends (Billion yen)



Note Numeric data is based on International Financial Reporting Standards (IFRS). (Subject organizations: Asahi Glass Co., Ltd. and its consolidated subsidiaries / Target period: Each business year ending December 31)

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

### ● Business Segment (As of the end of December 2017)



<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 2017)

|                     |   |                                     |   |
|---------------------|---|-------------------------------------|---|
| <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>            | 235,177,781 shares                              |
| <b>Founded</b>      | September 8, 1907                                   | <b>Employees</b>                    | 53,224 (consolidated), 6,401 (non-consolidated) |
| <b>Incorporated</b> | June 1, 1950  | <b>Consolidated Group Companies</b> | 210 (172 overseas)                              |

## Global Network

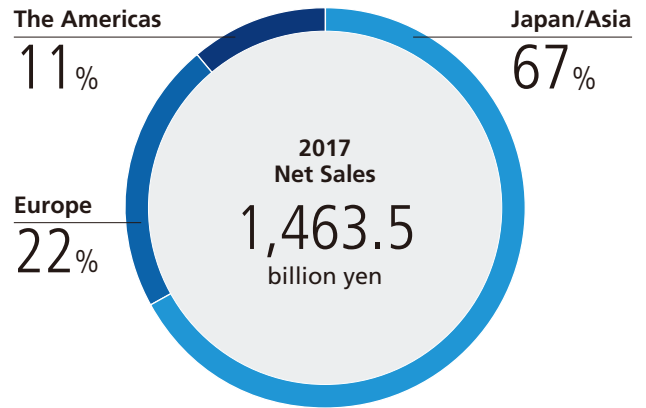
The AGC Group's business has extended into over 30 countries and regions. In its glass business, which has markets around the world, the Group has product development and manufacturing bases in the three regions of Japan/Asia, Europe and the Americas. In its electronics business, as its client businesses 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 2017)



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

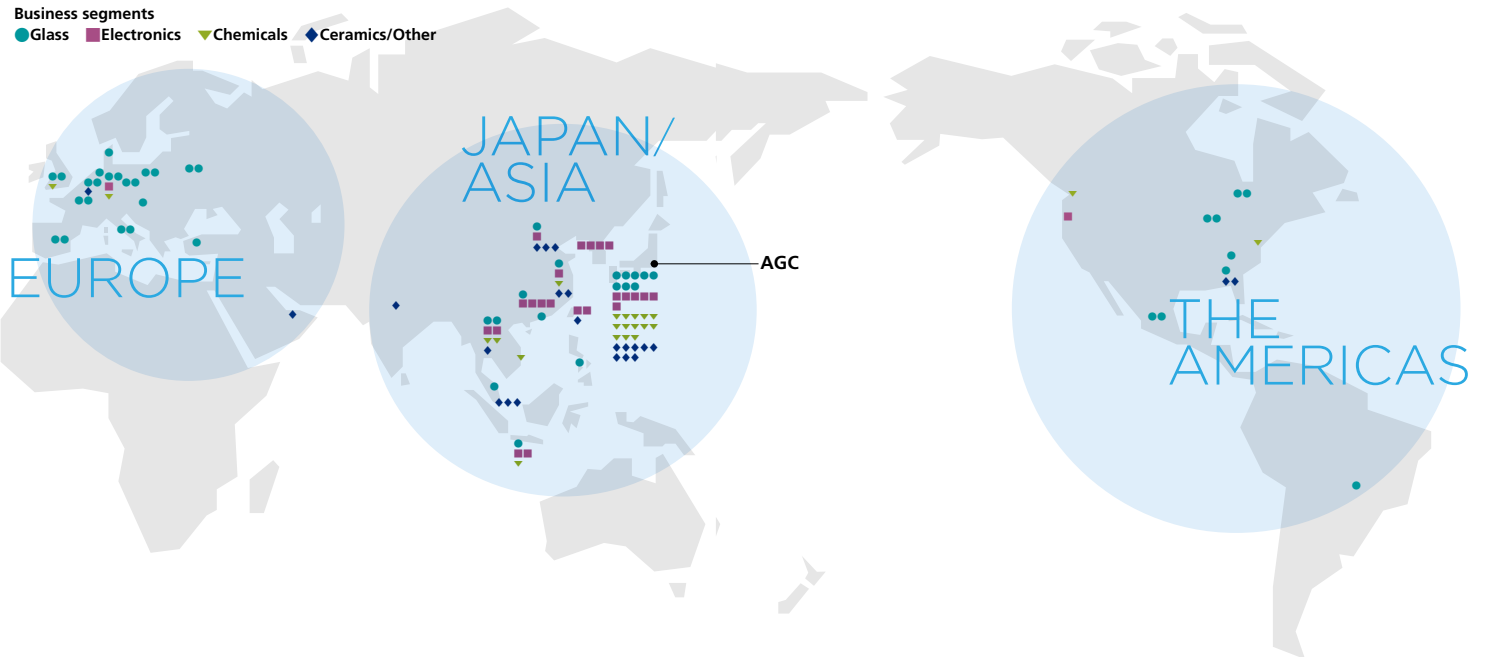
Europe  
Employees Approximately  
17,400

Japan/Asia  
Employees Approximately  
31,400

The Americas  
Employees Approximately  
4,400

#### 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 6), 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

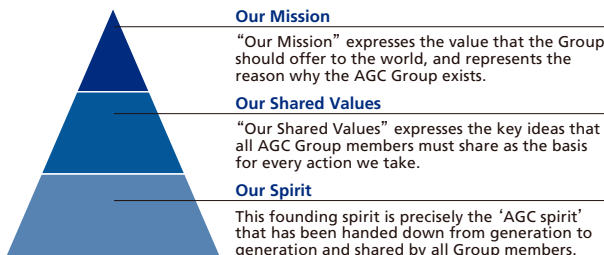
#### The AGC Group Vision

# “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

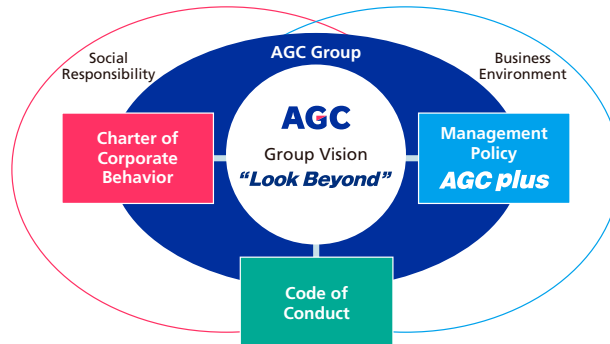
**“Never take the easy way out, but confront difficulties.”**

- 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 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

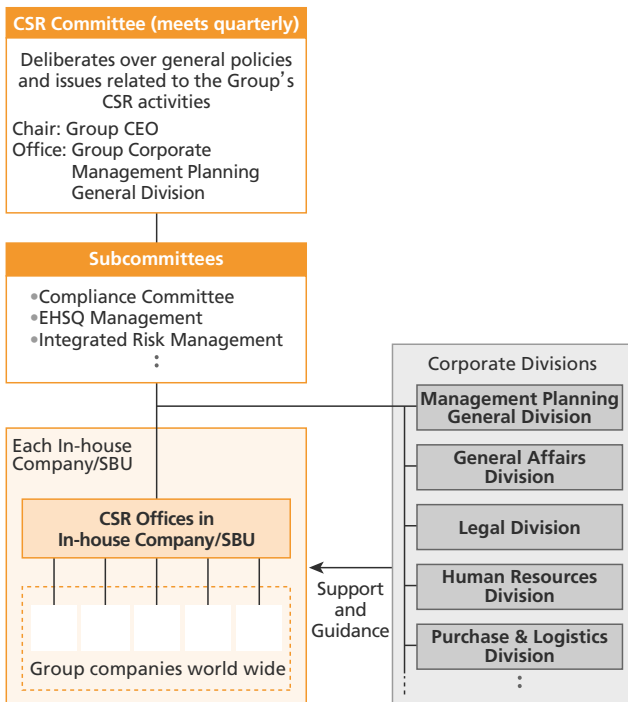
The AGC Group disseminates the Group Vision **"Look Beyond"**. Through in-house education, in-plant posters, vision books, the group news portal "We are AGC!" (see page 13) and other channels, the Group shares the Group Vision with domestic and overseas Group members and companies that have newly joined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

Also, through the regularly conducted Employee Satisfaction (ES) 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.

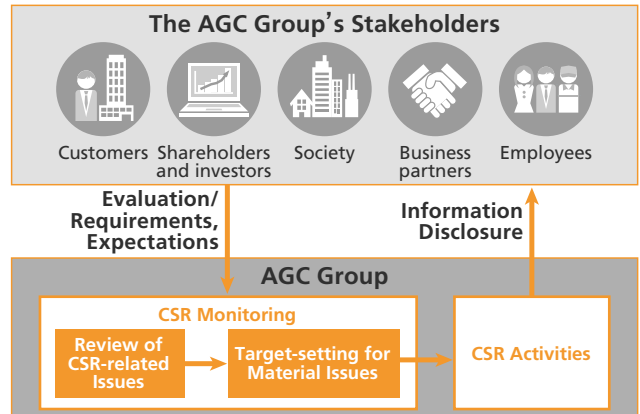
#### • CSR Promotion System



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

| ISO 26000 Items                  |  | AGC Group's 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           | Response to climate change                |
| 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



### 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 • Customer centers Etc.



Milan Design Week

##### Shareholders and Investors

- Regular stockholders' meetings
- Financial settlement briefings
- Information sessions for investors
- Facility tours
- The newsletter for shareholders, AGC 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 satisfaction 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 for stakeholders, such as pamphlets that introduce the Group management and initiatives (the AGC Report), a newsletter for shareholders and an official website. Since 2013, the Group has operated [an official AGC Facebook Page](#) in Japanese and English as a bilateral communication tool using SNS (social networking services).

### Feedback from Stakeholders via the Website


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

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

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

For customers  
(including general consumers)

## AGC Report 2018



A Broad Overview of the AGC Group's  
Corporate Vision, Business  
Strategies and Business Activities

#### For all stakeholders



#### AGC Website [www.agc-group.com/en/](http://www.agc-group.com/en/)

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

#### For shareholders and investors



#### Financial Review

Reports wide-ranging information on the AGC Group in detail and in a timely manner

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



#### CSR Website [www.agc.com/en/csr/](http://www.agc.com/en/csr/)

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



#### CSR Activity Report (Detailed) 2018 (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

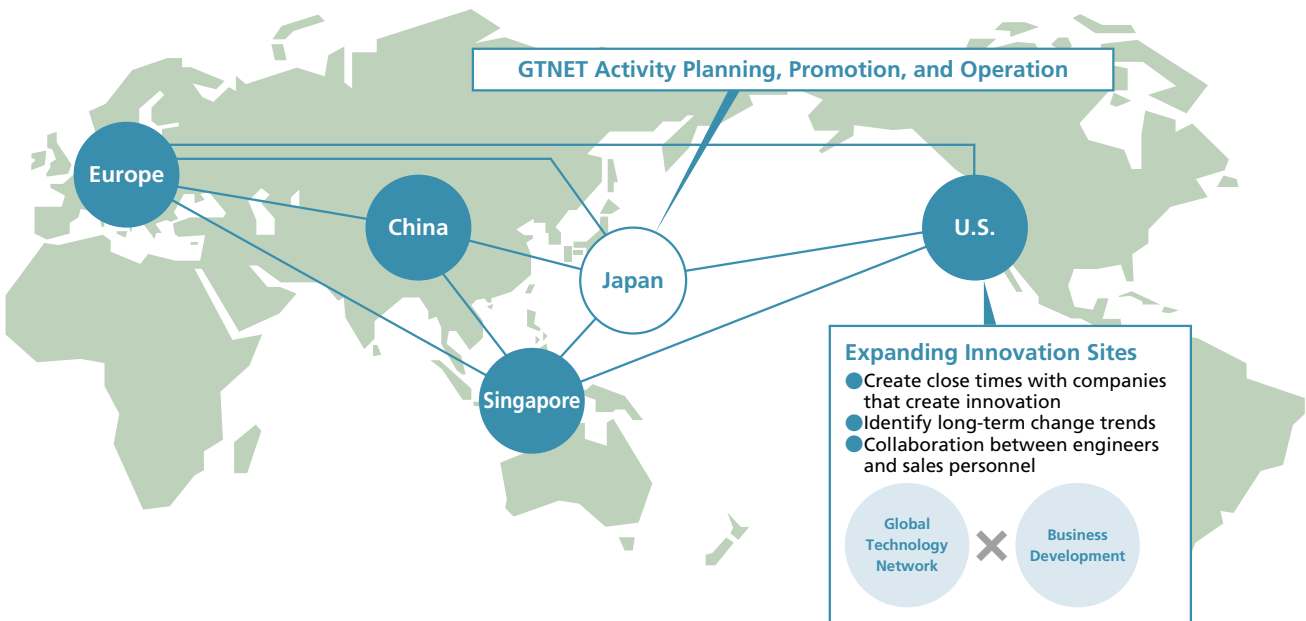
As a manufacturer of materials, the AGC Group deals with many customers in various countries and regions. Accordingly, the Group has established customer centers for each division to obtain direct customer feedback and is working on product development and improvement as well as boosting CS (customer 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 2017, it exhibited at Tokyo Motor Show (Japan), 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 2017

| Milan Design Week |  |
|-------------------|--|
| Dates             | April 3–9, 2017  |
| Location          | Milan (Italy)  |
| Details           | Under the theme of “Touch,” installations showed how technology is used to change the actual feel of glass, and promoted the evolution of glass beyond internal functionality. |
| Main visitors     | Architecture and Design Industry Representatives   |



| SID 2017      |   |
|---------------|---|
| Dates         | May 21–26, 2017   |
| Location      | Los Angeles (USA)   |
| Details       | A car mock-up displayed how every piece of automotive interior glass can be used as a display panel—showcasing AGC’s newest, most magical technology. |
| Main visitors | Electronics and IT Industry Representatives   |



| Tokyo Motor Show |   |
|------------------|---|
| Dates            | October 27–November 5, 2017   |
| Location         | Tokyo (Japan)   |
| Details          | A car mock-up displayed how every piece of automotive interior glass can be used as a display panel—showcasing AGC’s newest, most magical technology. |



## Shareholders and Investors

### Group-wide Initiatives

#### General Shareholders' Meeting

The general shareholders' meeting provides a convenient opportunity for the Group 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 Group, 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.

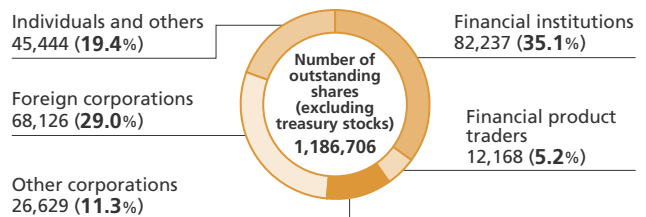
In addition, the AGC Review is published twice a year, providing easy-to-understand explanations of the Group's global business activities and products, as well as providing information about its management strategies and business performance.

#### 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.

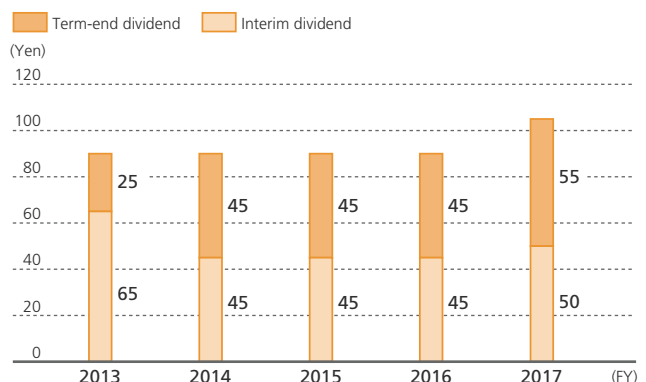
##### Number of Shares Held by Type of Investors

(as of December 31, 2017)  
(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 dialogues between the Group CEO and outside directors or experts, and with AGC employees. The Group internally shares important perspectives on the future of the AGC Group.

Furthermore, in 2017, the Group CEO visited 40 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 the AGC World homepage as viewable web content, 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

The AGC Group joined the Singapore Green Building Consortium from the planning stage at the request of the Singapore Economic Development Board. Led by the Singapore Economic Development Board, the Singapore Green Building Consortium was established with the participation of construction companies and building material manufacturers from around the world to accelerate the Singapore government's green building initiatives.

AGC Asia Pacific (AAP; Singapore), a sales management company that is popularizing Low-E double glazing glass in the Southeast Asian region, is working together with other companies to develop and promote innovative environmental buildings. AAP also regularly participates in BEX Asia, the largest annual green building exhibition in Southeast Asia, held in Singapore.



The BEX Asia



#### 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](#)

## Key topics for “CSR at the AGC Group”

### AGC Flat Glass (Thailand) Public

## Providing CSR Expertise for Industry-wide CSR Initiatives in Thailand

AGC Flat Glass (Thailand) Public (AFT) received the CSR-DIW Award for the ninth consecutive year in 2017. The award is given to companies that implement good practices for CSR activities by the Department of Industrial Works (DIW) of Thailand’s Ministry of Industry.

AFT has been continuously executing SET: “S” stands for Safe Products through Safe Processes, “E” is for Environment Preserving Products through Environmental Conservation Processes and “T” represents Transparent Products through Transparent Processes for Good Governance. In recognition of these efforts, the DIW granted CSR-DIW certification<sup>1</sup> to the company in 2009. AFT has also been selected to take part in a CSR-DIW network committee for CSR-DIW promotion. Through the committee, which includes representative members selected from 425 factories nationwide, the company has been contributing to the development of CSR in Thailand.

<sup>1</sup> CSR-DIW certification is a system based on ISO 26000 standards established by the Department of Industrial Works of the Ministry of Industry in Thailand.



CSR-DIW Continuous Award 2017

### AGC Group

## AGC Asia Pacific as a Founding Partner of WorldGBC’s Asia Pacific Regional Network

On January 1, 2017, AGC Asia Pacific Pte Ltd (AAP)—the regional headquarters of AGC in Asia Pacific—became one of the founding partners of the World Green Building Council’s Asia Pacific Regional Network.

With its large population and increasing urbanization, the Asia Pacific Regional Network is one of WorldGBC’s largest networks, and is absolutely critical for the success of green building globally. AAP’s expertise will further strengthen the network of Green Building Councils in the region.

Furthermore, the environment remains an integral part of AGC’s shared values. AAP’s efforts in the region will exemplify how green building mitigates negative ecological effects, positively benefitting the environment.

AAP was awarded the 2017 BCA-SGBC Sustainability Leadership Award in the category of Leadership in Green Building Product; for providing industry-proven and environmentally friendly architectural glass for use in green buildings. In Singapore, AGC architectural glass products are the first in their industry to be certified by the Singapore Green Building Product (SGBP) labeling scheme, with the highest possible rating of four ticks.

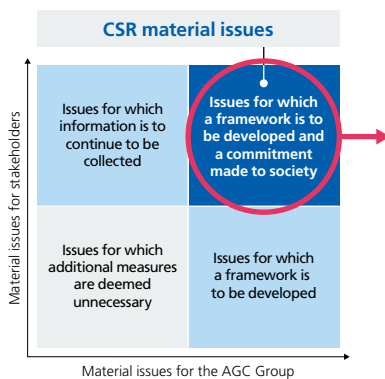


Members of AAP at BEX Asia

# 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                  |  | 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>Response to climate change</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 Organizational Governance

### Decision-making processes and structures

#### Reasons for Selection

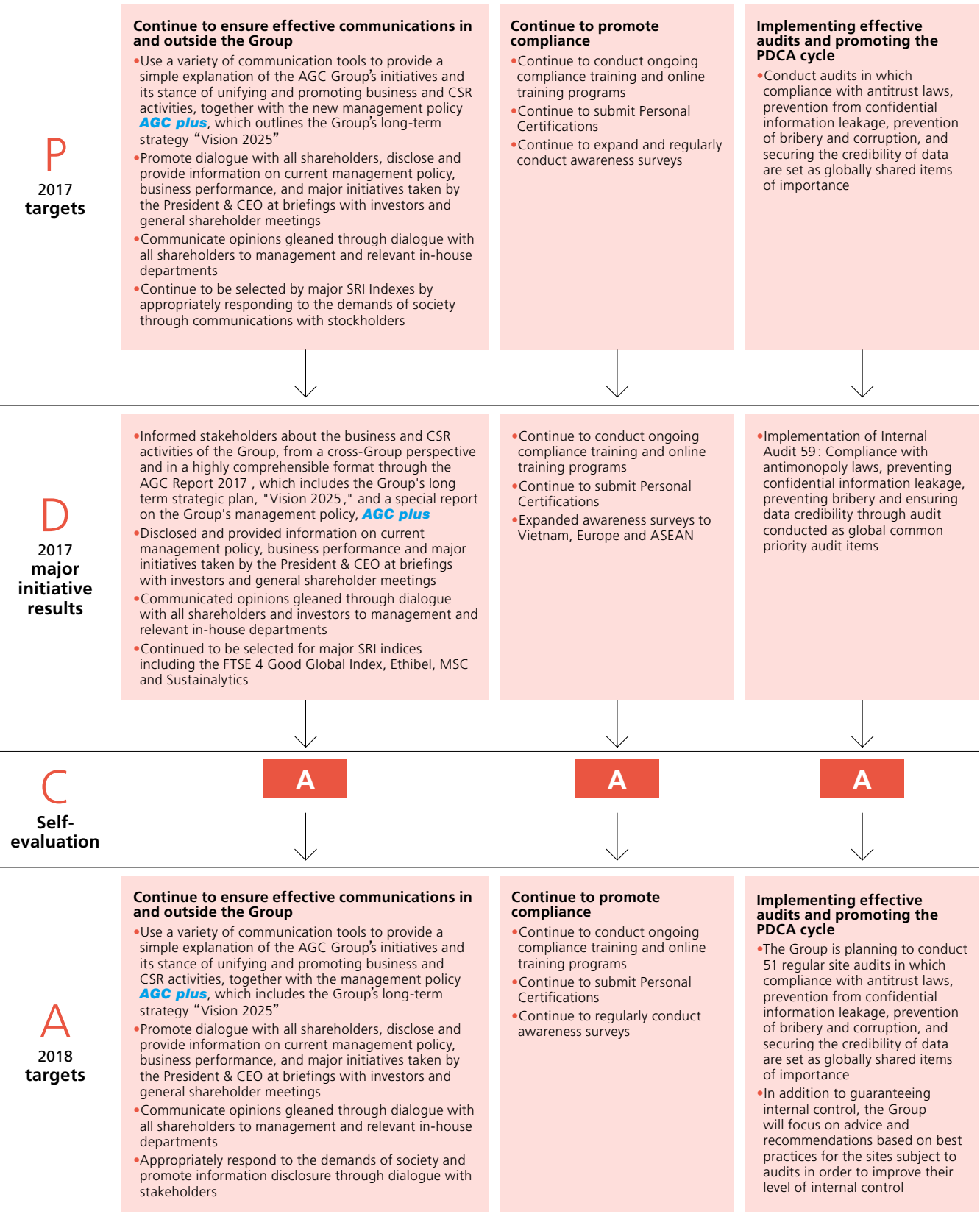
Organizational governance is the foundation of Core Issues in ISO 26000 and is indispensable in the promotion of social responsibility. With legislation regarding disclosure of non-financial information becoming stricter in respective countries and regions, companies are required to improve the transparency 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 Material Issues in 2017



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 has established the AGC Group Corporate Governance Basic Policy, and 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 adopted the following 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"

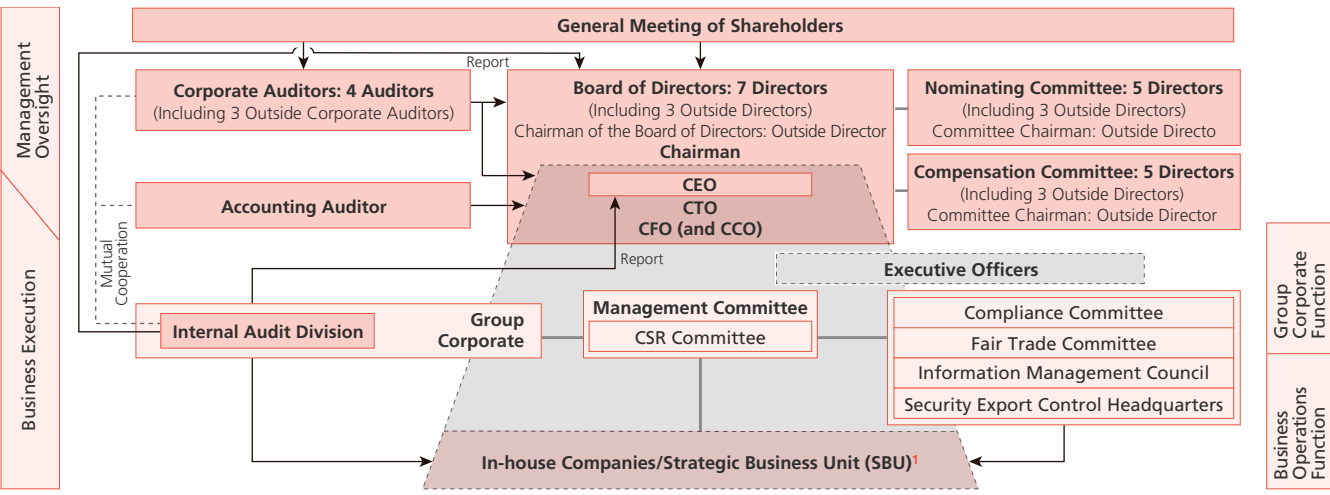
● Attendance Rate of Directors in Board of Directors Meetings

| FY   | Attendance rate |
|------|-----------------|
| 2015 | 95%             |
| 2016 | 100%            |
| 2017 | 98%             |

● Attendance Rate of Auditors in Board of Auditors Meetings

| FY   | Attendance rate |
|------|-----------------|
| 2015 | 100%            |
| 2016 | 96%             |
| 2017 | 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

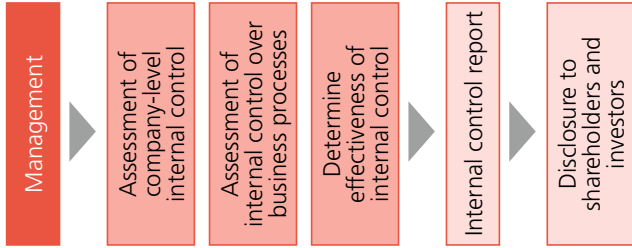
In response to the establishment of the Companies Act, AGC voted on its Corporate Policy on Internal Control at the Board of Directors meeting held in May 2006. The aim was to review and ensure the appropriateness of its business operation systems, including the compliance system.

- 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 2017, 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.

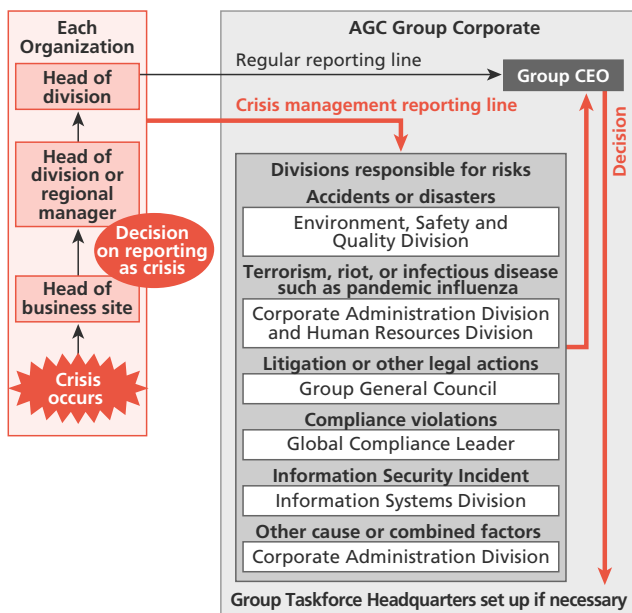
### Responding effectively in the event a risk occurs

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. As an example, given the danger of global outbreaks of infectious diseases, such as pandemic influenza and Ebola virus, the Group has put a system in place for flexibly responding to the status of an infectious disease outbreak throughout its operations worldwide. Under this system, the Group is promoting preventative measures and countermeasures against the escalation of problems appropriate for each in-house company and site.

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

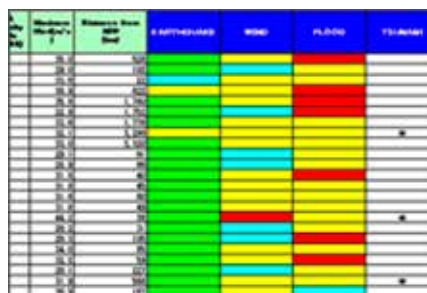
Recognizing that a large-scale natural disaster could seriously impact its business activities, the AGC Group has set four concepts to respond effectively: human life and safety first, prevention of secondary disasters, contribution to and co-existence with society, and business continuity (see page 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 2017, the Group ran a Nankai Trough earthquake emergency drill, 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

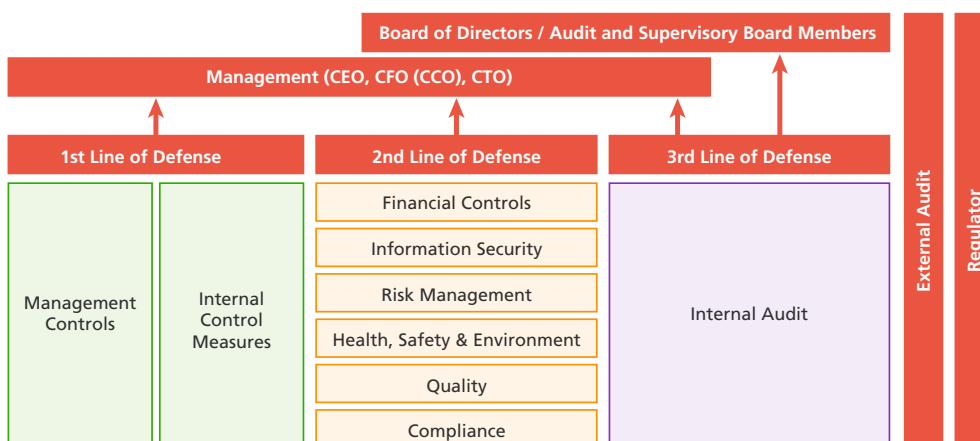
### Establishment and Operation of the Internal Control System

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 the Board of Directors.

A number of common global auditing items have been established. In 2017, 59 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 2017, such audits were performed in Japan (1 case), China (1 case), Germany (2 cases) and the United Arab Emirates (1 case).

In the regions of Japan/Asia and Europe, "thematic audits" were also carried out across respective regions on specific themes.

## 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. To rectify any variation in activities or management standards, the division continuously conducts monitoring 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 2018, 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<br>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<br>4. Environment                                       |
| Sustainable resource use                           | 4. Environment   |
| Climate change mitigation and adaptation           | 4. Environment   |
| Anti-corruption                                    | 11. Gifts and Entertainment<br>12. Relations with Government Officials and Politicians |
| Fair competition                                   | 2. Fair Competition and Antitrust  |
| Promoting social responsibility in the value chain | 4. Environment<br>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

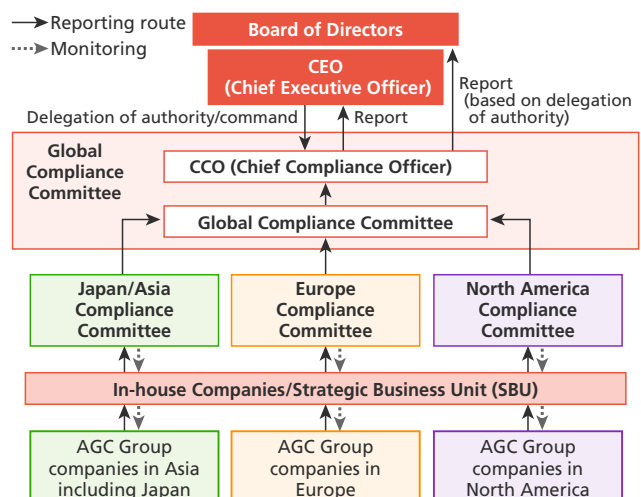
The AGC Group has established a Chief Compliance Officer (CCO) responsible for development of the compliance framework and promotion of compliance in the AGC Group. Under the supervision of the CCO, a Global Compliance Leader, Global Compliance Committee and local Compliance Committees are established 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



## 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.

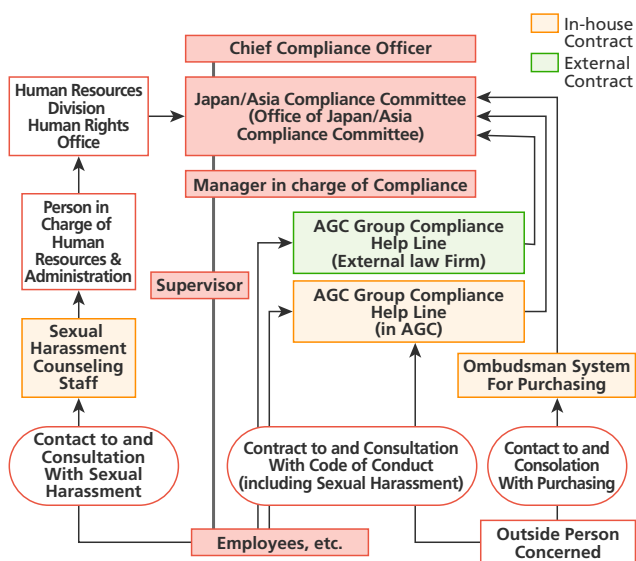
As a general rule, help lines are set up at each company, while additional area-wide help lines are established in Europe, North America and Asia. In Japan, employees can also contact external lawyers.

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 |
|------|-------------------------|
| 2017 | Approx. 280             |

### Implementing Compliance Training

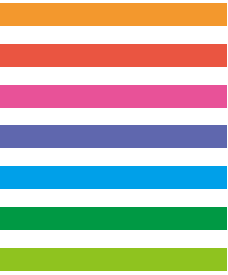
In order to promote the Code of Conduct globally, the AGC Group provides various training opportunities to its employees around the world, and has placed particular emphasis on strengthening compliance training worldwide.

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

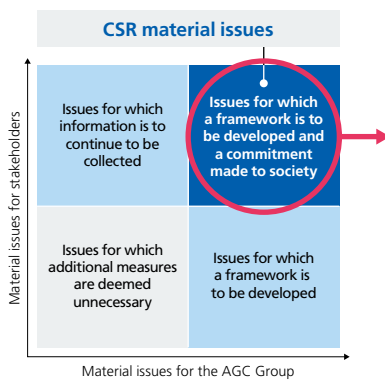
The AGC Group uses surveys to gauge the level of compliance in the workplace and the ease of use of help lines. Based on the results, any necessary measures are implemented.



# 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>Response to climate change</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

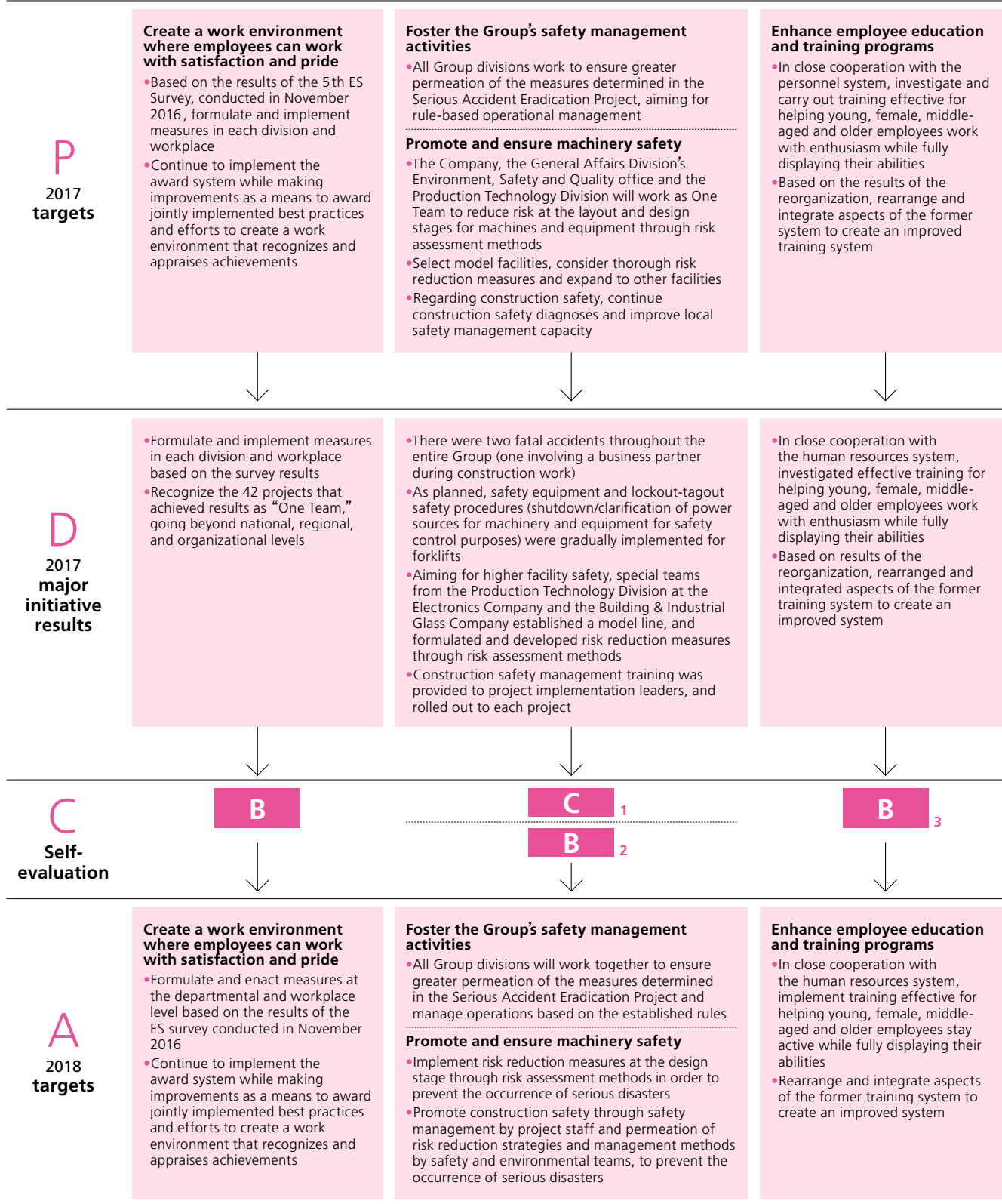
Corporations are expected to provide opportunities for their employees to grow, develop their abilities and skills and improve their standard of living, from financial, social and cultural viewpoints. The AGC Group believes that human resources are the driving force behind the AGC Group's business operations, 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 Material Issues in 2017



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

- 1** Reason for "C" Grade: Two fatal accidents occurred in the Group
- 2** Reason for "B" Grade: Inadequate participation of facility users
- 3** Reason for "B" Grade: Reorganization and integration of the training system was not completed

## 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.

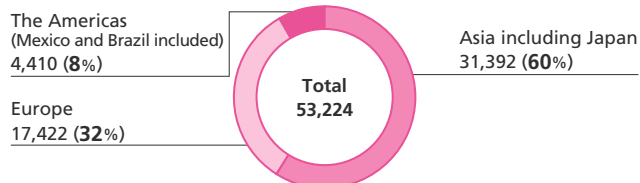
### Management Structure

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, 2017)



### 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 2017, 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, 2017 excluding those dispatched to other Group Companies

| Classification | Male                   | Female     | Total        | Percentage of Female |       |
|----------------|------------------------|------------|--------------|----------------------|-------|
| Managers       | 2,068                  | 120        | 2,188        | 5.5%                 |       |
| Non-Managers   | Career-track positions | 636        | 141          | 777                  | 18.1% |
|                | Shop-floor workers     | 2,846      | 83           | 2,929                | 2.8%  |
|                | Clerical positions     | 17         | 486          | 503                  | 96.6% |
| Subtotal       | 3,499                  | 710        | 4,209        | 16.9%                |       |
| <b>Total</b>   | <b>5,567</b>           | <b>830</b> | <b>6,397</b> | <b>13.0%</b>         |       |

#### ●Employee-Related Data of AGC

As of December 31, 2017

| Item                                  | Male   | Female   | Total    |
|---------------------------------------|--|----------|----------|
| <b>Average age</b>                    | 43   | 42       | 42       |
| <b>Average length of service</b>      | 18 years   | 15 years | 18 years |
| <b>Average overtime working hours</b> | 21.1 hours/month<br>(average for members of the labor union) |          |          |
| <b>Percentage of paid leave taken</b> | 93.4%<br>(average for members of the labor union)            |          |          |

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

Period: April 2017 to March 2018

- excluding employees retiring upon reaching mandatory retirement Age

|          | Number of people |
|----------|------------------|
| Retirees | 94               |

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

| Year of recruitment | New recruits | Retained employees <sup>1</sup> | Retention rate |
|---------------------|--------------|---------------------------------|----------------|
| 2015                | 70           | 67                              | 95.7%          |

<sup>1</sup> As of April 2018

## 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/<br>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 Asahi Glass 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 |
|------|--------------------------------|-------------|---------------------------|
| 2013 | 4,121                          | 37.8        | 14 years and 8 months     |
| 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     |

<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 employee satisfaction-centric approaches into daily management, including opportunities for growth and success, appropriate evaluation and treatment.

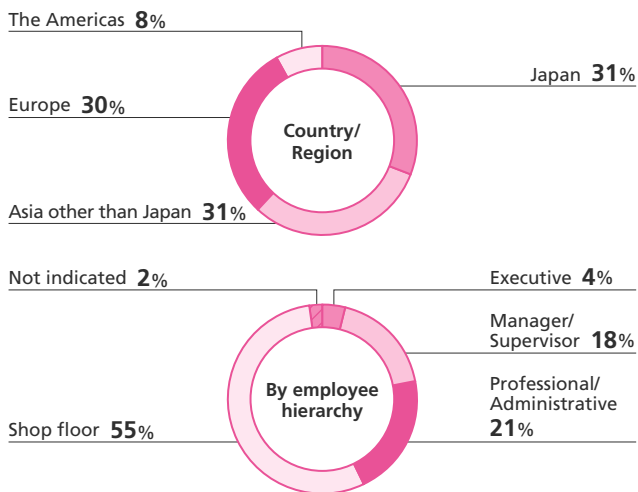
### Group-wide Initiatives

#### Carrying out ES Surveys and ES Improvement Activities

Since 2005, every three years the Group conducts ES 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 ES Survey.

The most recent ES Survey (the fifth such survey) was carried out in November 2016 across 21 languages, targeting 43,500 Group employees and beginning a new PDCA cycle aimed at improving employee satisfaction.

● Respondents by Region/Job (5th ES Survey)



● ES 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%           |

● ES Survey Question Items

| Employee Engagement   | Employee Enablement  | Review of Previous Measures |
|---|--|-----------------------------|
| 1. Clear and Promising Direction<br>2. Leadership<br>3. Quality and Customer Focus<br>4. Respect and Recognition<br>5. Development Opportunities<br>6. Compensation | 1. Performance Management<br>2. Authority and Empowerment<br>3. Resource<br>4. Collaboration<br>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 2017

| Division   | Number    |
|--|-----------|
| Architectural and Industrial Glass                           | 8         |
| Automotive   | 8         |
| Electronics  | 8         |
| Chemicals  | 7         |
| Applied Glass Materials General Division                     | 2         |
| AGC Ceramics   | 2         |
| CTO Office <sup>1</sup> and Productivity Innovation Division | 5         |
| CFO Office <sup>2</sup> and Internal Auditing                | 2         |
| <b>Total</b>   | <b>42</b> |

<sup>1</sup> Technology General Division, Business Development Division  
<sup>2</sup> Management Planning, Administration, 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, the Group implemented a system 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 (applicable to AGC proper).

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

To help employees balance their work and family obligations, AGC has implemented several systems for employees who care for children and family members, including a shortened working

hour system and a childcare leave system with more supportive conditions than those mandated by law in Japan. 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      |
|------|---|--|
| 2013 | 75 <sup>1</sup> (Including 2 employees taking short-term leave) | 0  |
| 2014 | 96 <sup>2</sup> (Including 2 employees taking short-term leave) | 1  |
| 2015 | 99 <sup>3</sup> (Including 7 employees taking short-term leave) | 1  |
| 2016 | 87 <sup>4</sup> (Including 7 employees taking short-term leave) | 5 (Including 1 employee taking short-term leave) |
| 2017 | 76 <sup>5</sup> (Including 7 employees taking short-term leave) | 2 (Including 1 employee taking short-term leave) |

<sup>1</sup> of which four employees were male

<sup>2</sup> of which two employees were male

<sup>3</sup> of which 12 employees were male

<sup>4</sup> of which seven employees were male

<sup>5</sup> of which seven employees were male



Next Generation Support Certification Mark "Kurumin"

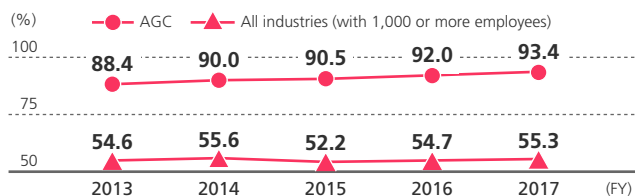
#### ● Comparison between AGC's System and Legal Requirements

| Ordinance  | Particulars  | AGC's system  |
|--|--|---|
| <b>Childcare leave</b>   | <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>   |
| <b>Shortened working hours for childcare</b>                                     | <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>              |
| <b>Capping of the number of overtime and holiday working hours for childcare</b> | <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>   |
| <b>Other</b>   |  | <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 to facilitate child-rearing or family care</li> <li>A system in which employees, as a general rule, assume the same job after returning from leave</li> </ul> |

### Promoting Annual Paid Leave (AGC)

The percentage of leave consumed came to 93.4% (labor union member average) at AGC in 2017. 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 Labor union member average

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

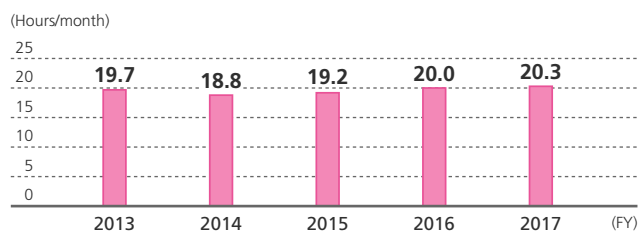
### Reducing Overtime Working Hours

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 2017, the company hired one 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 |
|-------------|----------------------------|------------------------------------|
| 2013        | 6                          | 1                                  |
| 2014        | 2                          | 1                                  |
| 2015        | 2                          | 0                                  |
| 2016        | 4                          | 0                                  |
| 2017        | 1                          | 0                                  |



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 2.5% of AGC Group global management positions.

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 a woman serving as an outside director on its Board of Directors. 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

With the aim of making the most of diversity in the workplace, for AGC, 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 2017, 18.4% 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 work-from-home system has been expanded.

#### ●Trends in Percentage of Female Managers<sup>1</sup>

| FY   | Proportion of female employees |
|------|--------------------------------|
| 2013 | 4.9%                           |
| 2014 | 5.1%                           |
| 2015 | 5.2%                           |
| 2016 | 5.4%                           |
| 2017 | 5.4%                           |

<sup>1</sup> The data above is calculated based on manager positions of AGC, which are not consistently defined for the AGC Group as a whole, therefore it does not allow simple comparison with other global data.

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

| FY   | Number of new female graduates | Total new graduates | Percentage of female employees |
|------|--------------------------------|---------------------|--------------------------------|
| 2015 | 6                              | 61                  | 9.8%                           |
| 2016 | 15                             | 75                  | 20.0%                          |
| 2017 | 18                             | 98                  | 18.4%                          |

### 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 |
|------|-------------------------------|--------------------|----------------------------|
| 2013 | 109                           | 159                | 68.6%                      |
| 2014 | 90                            | 106                | 84.9%                      |
| 2015 | 90                            | 118                | 76.3%                      |
| 2016 | 111                           | 124                | 89.5%                      |
| 2017 | 63                            | 84                 | 75.0%                      |

#### ●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           | 64             |
| 2020           |                |
| 2021           | 65             |

## Employment of People Living with Disabilities

AGC has expanded employment opportunities for people living with disabilities in order to promote diversity. In 2008, the employment rate of people with disabilities exceeded the rate designated by law (1.80%) for the first time. It continued this trend in 2017 with an employment rate of 2.30% as of the end of the year.

### ● Employment Rate of People with Disabilities

| FY   | Number of people with disabilities (actual number) | Employment rate |
|------|--|-----------------|
| 2013 | 110  | 2.07%           |
| 2014 | 110  | 2.10%           |
| 2015 | 110  | 2.15%           |
| 2016 | 112  | 2.17%           |
| 2017 | 122  | 2.30%           |

## 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) |
|------|--------------------------------------|
| 2015 | 23,550                               |
| 2016 | 26,345                               |
| 2016 | 27,543                               |

### 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 2017, approximately 8,000 employees are registered in the Skill Map in 28 technical categories and 13 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 184 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 98 employees)

**Professional System**

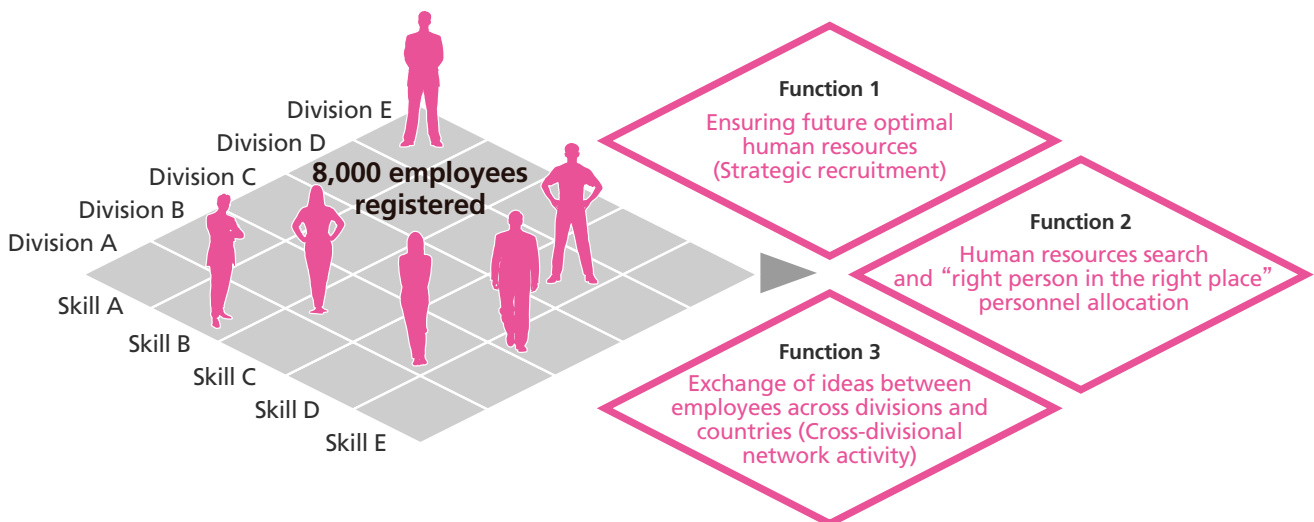
A system under which managers who have extremely high practical knowledge, skills or behavioral traits regarding technological skills and expertise vital to the AGC Group, and can exercise them to great effect, are certified as professionals, evaluated and treated appropriately. (52 managers)

**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 2017.  
 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 based on 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.

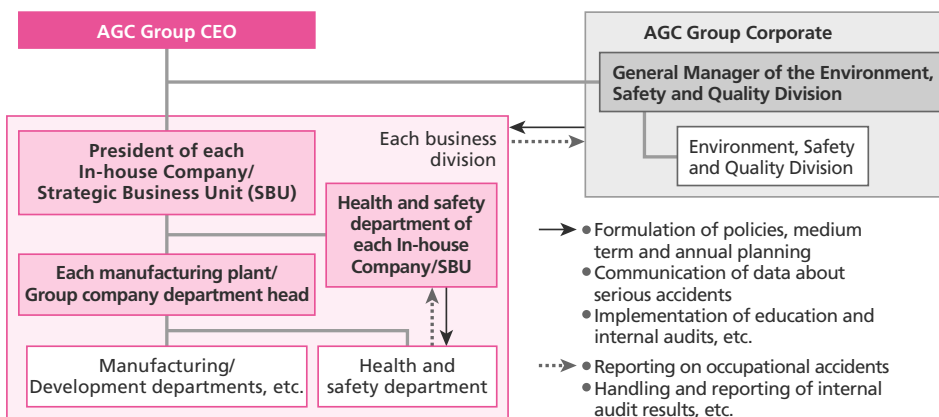
Starting in 2013, the EHSQ Management System was created to facilitate the integrated management of EHSQ (Environment, Occupational Health & Safety, and Quality) efforts across the Group.

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

(As of the end of December 2017)

| Coverage                                 | Number of certified plants |
|--|----------------------------|
| AGC                                      | 1                          |
| Group companies in Japan                 | 5                          |
| Group companies in Asia other than Japan | 11                         |
| Group companies in Europe                | 52                         |
| Group companies in North America         | 1                          |
| <b>Total</b>                             | <b>70</b>                  |

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



## Group-wide Initiatives

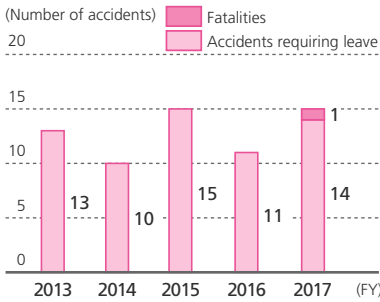
### Developing a System to Collect Global Accident Data

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.

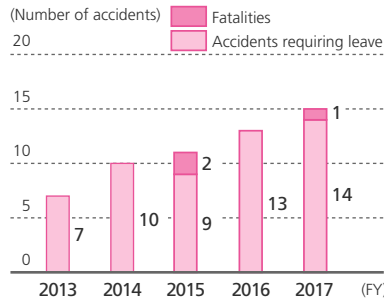
Due to these initiatives, over the long-term incidents have trended downward. In the past few years, the number of occupational accidents has leveled off, although some areas have seen an increase.

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

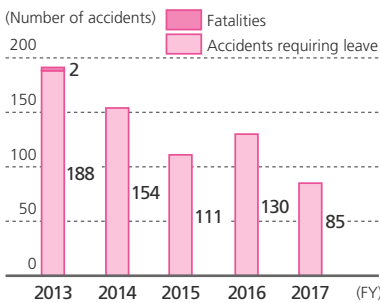
##### Japan



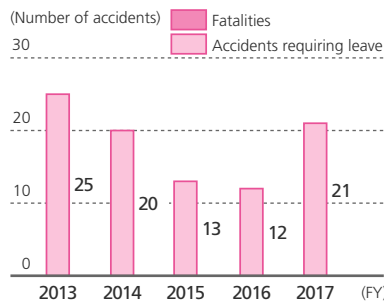
##### Asia other than Japan



##### Europe



##### The Americas



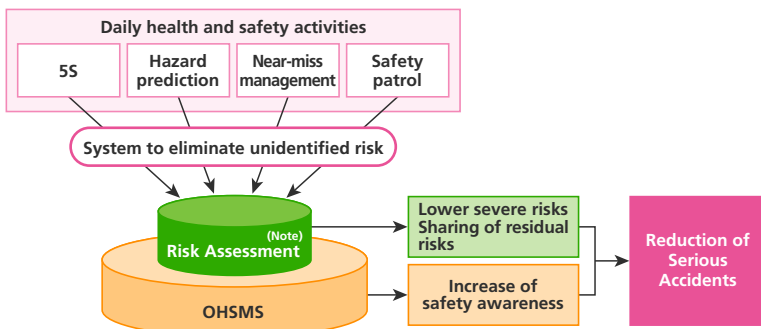
**Note** The assessment criteria for accidents requiring leave differ among Asia including Japan, Europe and The Americas, which disables the simple comparison of the numbers of occupational accidents among each region.  
**Note** In Europe, new sites that joined the group in 2013 are included in the figures, which shown an increase in accidents requiring leave for that year, but in recent years it has been improving

#### ● Occupational Accidents in 2017<sup>1</sup> (includes AGC Group in Japan and Asia / business partners)

| Type                | Japan          |               | Asia other than Japan | Total          |
|---------------------|----------------|---------------|-----------------------|----------------|
|                     | Major sites    | Others        |                       |                |
| Death               | 1 (0)          | 0 (0)         | 1 (0)                 | 2 (0)          |
| Leave of Absence    | 6 (8)          | 8 (3)         | 7 (13)                | 21 (24)        |
| No Leave of Absence | 11 (8)         | 2 (3)         | 8 (10)                | 21 (21)        |
| Minor injuries      | 41 (26)        | —             | —                     | 41 (26)        |
| <b>Total</b>        | <b>59 (42)</b> | <b>10 (6)</b> | <b>16 (23)</b>        | <b>85 (71)</b> |

**Note** The figures in parentheses represent the numbers of occupational accidents in 2016.  
**Note** The numbers reported for minor injury (Japan Main Sites) in the 2016 report were incorrect. They have been revised in this report (previously: 28, correct: 26).

#### ● 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 2017, 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

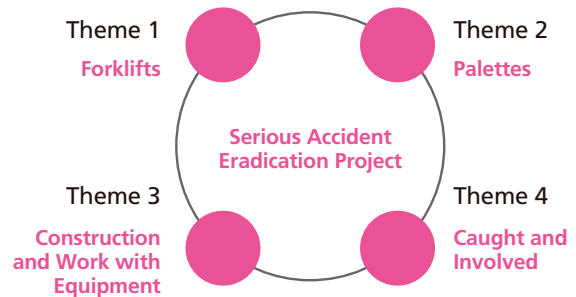
<sup>1</sup> Health and safety conventional activities such as the 5S (seiri [sort], seiton [set in order], seiso [shine], seiketsu [standardize] and shitsuke [sustain]), risk prediction, near-miss management (hiyari-hatto) and safety patrols.

### 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 2017, 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 2017, 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)

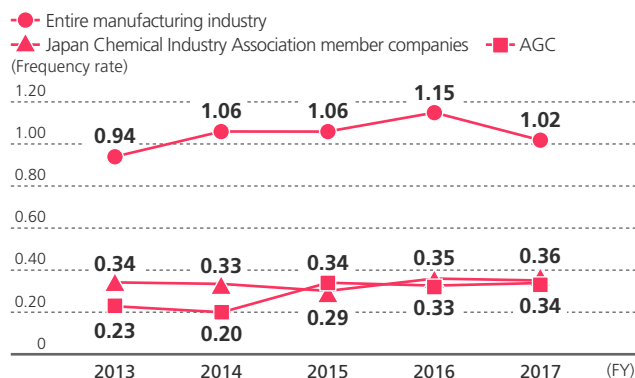
At AGC, safety and health committees are established at each site based on collective labor agreements, and labor unions’ opinions regarding safety and health are considered. Business partners working within the site also participate in the committee.

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)

|   | 2016  | 2017  |
|---|-------|-------|
| Entire manufacturing industry               | 0.07  | 0.08  |
| Japan Chemical Industry association members | 0.009 | 0.035 |
| AGC   | 0.018 | 0.385 |

#### ●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 Health Management Policy, which details its vision for the health management of all employees.

#### 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.

## Key topics for “Human Rights and Labor”

### AGC Group Automotive (Thailand)

### Thailand’s Best Practice Workplace on Labor Relations and Labor Welfare Award Won for 14th Consecutive Year

AGC Automotive Thailand (AATH) received a Best Practice Workplace on Labor Relations and Labor Welfare Award in 2017. This marked 14 consecutive years the company has won this award, which is given by the Thai Ministry of Labor to the companies that have established exemplary labor relations and welfare frameworks.

Over 1,000 companies across Thailand submit entries each year. Government officials serve as judges, visiting each company and conducting interviews of both managers and employees. AATH won the award in 2017 after being highly evaluated for promoting solidarity in the workplace while maintaining positive relations between management and labor. In the province of Chonburi, where the company is based, AATH is one of only two companies that have received the award for 14 consecutive years upwards.



Best Practice Workplace on Labor Relations and Labor Welfare Award ceremony

### AGC Flat Glass Czech A.S.

### AGC Flat Glass Czech Recognized for Social Responsibility Initiatives

In the Czech Republic, AGC Flat Glass Czech A.S. (AFCZ) first acquired SA8000 certification<sup>1</sup> in May 2011, and then renewed the certification in 2014. As an international accountability standard for the protection of the rights of workers, SA8000 prohibits child labor and forced labor, and sets requirements for the health, safety and remuneration of workers. Based on these standards, AFCZ is aiming to ensure sound management practices.

In 2015, AFCZ was selected for a Social Responsibility Award by the Regional office of Ústí, together with the Economic and Social Council of the Ústí Region and the Quality Council of the Czech Republic.

The award is given to companies that take care of their employees beyond legal requirements and contribute to regional development. AFCZ has also been awarded Best Employer of the Ústí Region, and designated as the third best employer in the Czech Republic.



SA 8000 certification form

<sup>1</sup> SA 8000 certification is a standard overseen by Social Accountability International, an accreditation agency in the United States. Companies can acquire the certification if they meet the standard of inspections by thirdparty organizations.

## AGC Group (China)

### Safety and Health Management Activities Continue to Make Progress in China

The AGC Group has been promoting safety and health management at its workplaces in China through cross-divisional networking activities.

Since commencing in 2014, employees with skills in safety management in the glass, electronics and ceramics divisions of each Chinese group company have been participating. Specifically, employees have been hosting group discussions, making collaborative efforts to eliminate serious accidents at each company and sharing information on the issues they face, including cases of successful initiatives.



Commemorative photo of all participants

## AGC Group (Thailand)

### Sharing Plant Engineering Skills in Thailand as Part of Skills Networking Activities

The AGC Group has been expanding cross-divisional networking activities globally. As part of these activities, the sharing of plant engineering skills has been promoted in Thailand since 2015, following a safety and health management meeting in China.

Today, workshops are held regularly to bring together employees with common skills from group companies in Thailand involved in glass, electronics and chemicals, allowing them to work together to enhance their knowledge and skills. As employees meet with those outside of their divisions, the workshops are leading participants to find new issues and solve them.



Commemorative photo at the workshop

## AGC Group

## Safety Initiatives that “Learn” from Past Failures Receive Good Risk Sense Award

The AGC Group has established an exhibition space within its human resources training facility the AGC Monozukuri Training Center that presents cases of past failures. Named Faites Hall based on a combination of the initial letters in the phrase, “failure teaches success,” the space exhibits 13 examples of failures that resulted in occupational accidents, product defects and R&D failures. The purpose of Faites Hall is to prevent failures from occurring in the future by analyzing the causes of past incidents, and proactively sharing the lessons learned across the entire AGC Group.

Occupational accidents have been used proactively in group-wide training programs intended to raise employees’ safety awareness levels and reduce the risk of work-related accidents and injuries. In recognition of this initiative, AGC received a Good Risk Sense Award from The Chemical Daily, a Japanese chemical industry newspaper, at the 2014 Risk Sense Forum held by the Japanese non-profit organization Risk Sense Research Society.



The Good Risk Sense Award plaque

## Chemicals Company

## Responsible Care Award Received for Expanding Practical Safety Training Throughout Asia

The Chemicals Company has extended its practical safety skills training program conducted at major plants in Japan to the rest of Asia. In one case, practical safety skills originally developed at the Chiba Plant in Japan were adopted by PT Asahimas Chemical (ASC), which is making a major contribution to the creation of its own culture of safety.

ASC employees became progressively more aware of safety and changed their work approach as the training was adopted. A center used for the training was also made available to neighboring companies and the local community, which greatly improved ASC’s relations with them. In recognition of those efforts, the Chemicals Company was presented with a Responsible Care Award by the Japan Chemical Industry Association at its ninth annual awards ceremony in May 2015.



The Japan Chemical Industry Association awards ceremony

## AGC Automotive Europe

## Proactively Carrying Out a Program for Helping Employees Manage Stress

AGC Automotive Europe (AAEU) began implementing Well-Being @AGC in 2013 as a program to give managers the skills to support employees suffering from stress. The program is based on training provided by a professional counselor.

A survey of over 350 employees has also been conducted with assistance from academic psychologists in order to identify mental health risks in the workplace. Because the program has been very effective, it is now being widely adopted at factories and group companies in Europe.

Furthermore, AAEU has created a management charter related to workplace well-being, and set up committees responsible for implementing activities based on the charter.

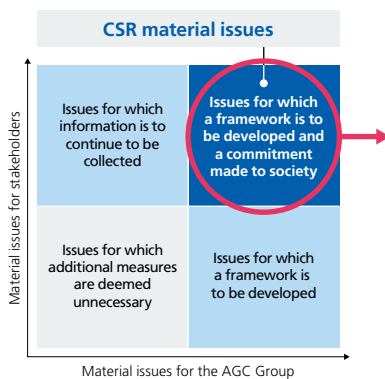


# Society

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                      |
|----------------------------------|--|--|
| 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>                      |
| Fair Operating Practices         | Sustainable resource use                           | <b>Sustainable use of resources</b>              |
|                                  | Climate change mitigation and adaptation           | <b>Response to climate change</b>                |
| Consumer Issues                  | 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> |
|                                  | 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

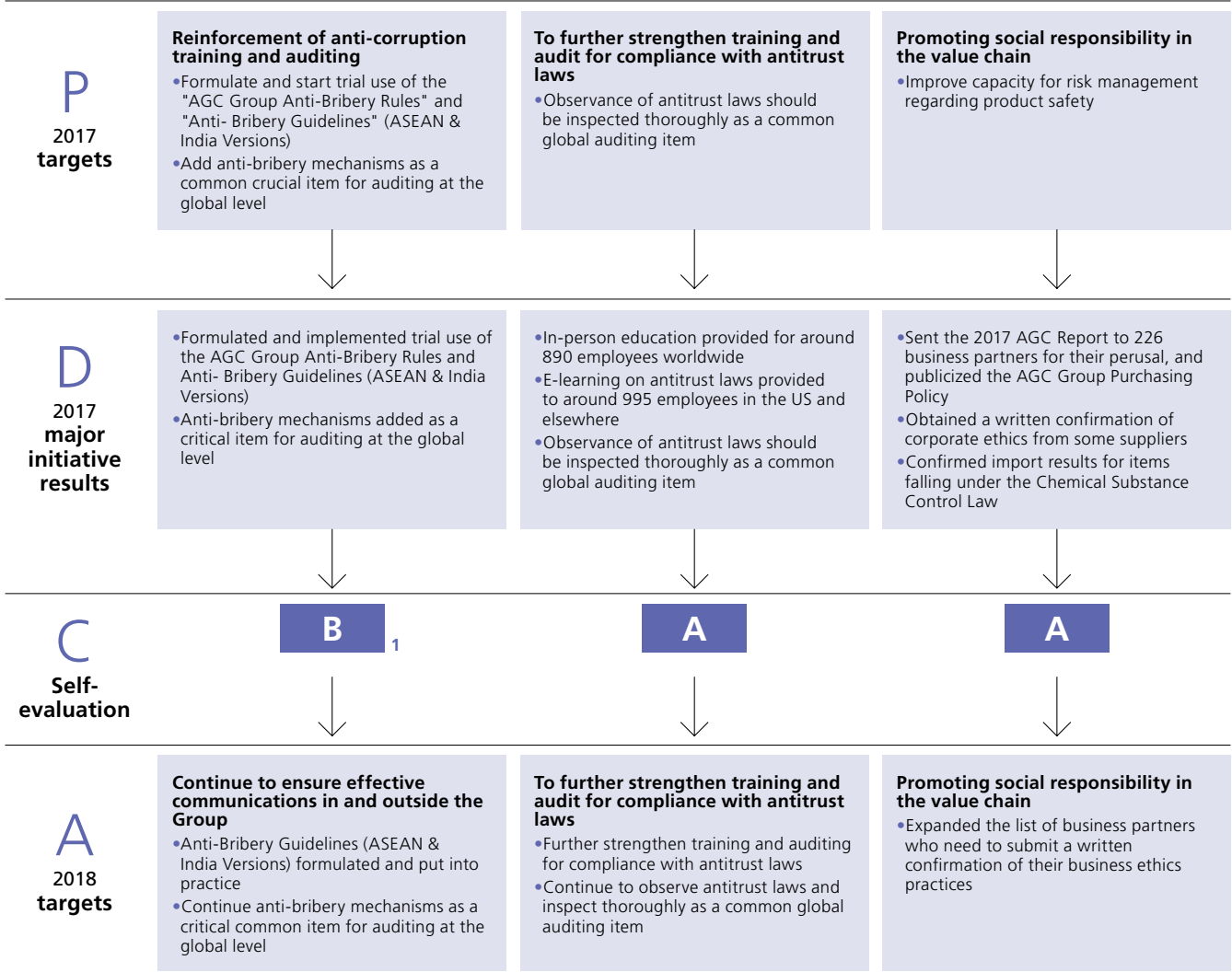
**Reasons for Selection**

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 Material Issues in 2017



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

<sup>1</sup> Reason for "B" Grade: Limited operation



## 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

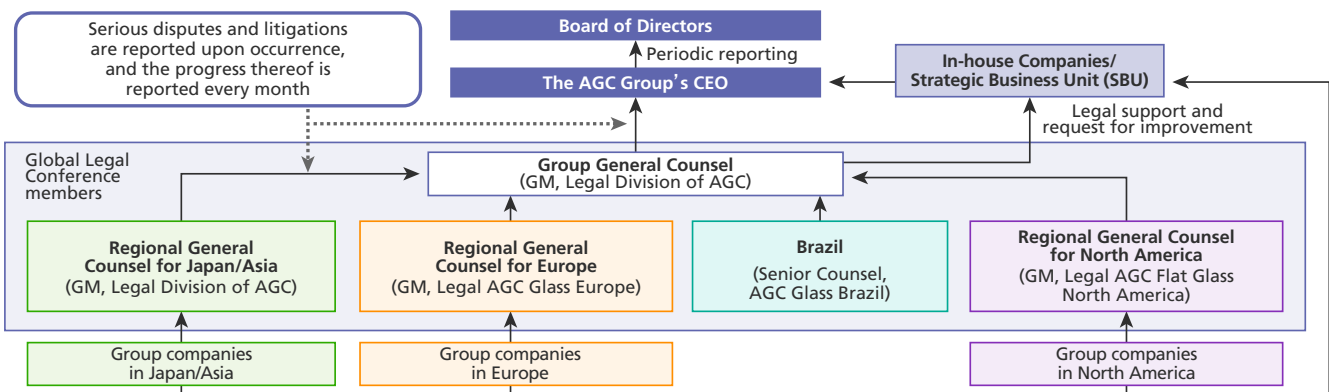
In addition to the Group Code of Conduct that summarizes matters all employees must comply with in their work, the AGC Group has formulated and implemented global guidelines for compliance with antitrust laws. The Guidelines state that, when meeting with a competitor company, (1) the legality of the 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 (see page 19) 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          |
|------|--------------------------------------|------------------------------------|
| 2017 | Approx. 995                          | 63 (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 into operation the Anti-Bribery Guidelines in relevant countries in Asia that detail procedures, concepts and judgment criteria.

### 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 2017. 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 2017, the Group conducted e-learning about the Act for approximately 6,700 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

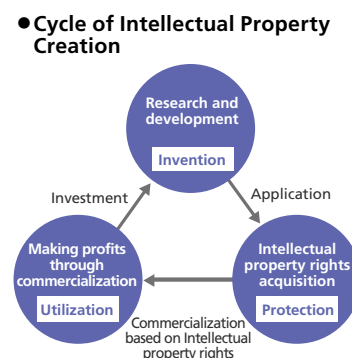
#### Protection and utilization of intellectual property rights created within the Group

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.



## 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.

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 (AGC AGC Group)

| FY   | AGC   | Group companies in Japan | Group companies in Asia other than Japan | Group companies in Europe        | Group companies in North America |
|------|-------|--------------------------|--|----------------------------------|----------------------------------|
| 2015 | 6,100 | 4,300                    | 5,300                                    | 2,500                            | 500                              |
| 2016 | 6,100 | 4,300                    | 5,900                                    | Will be implemented in 2017      |                                  |
| 2016 | 6,400 | 4,300                    | 6,000                                    | Will be implemented in 2017–2018 |                                  |

### 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.

### 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 19). 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 6) 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

Since 2013, the AGC Group has regularly conducted business partner CSR surveys. To understand the implementation status of CSR activities at its business partners, the Group has created common Group questionnaires and guidelines to determine the progress of CSR activities, the presence or absence of specialized departments and persons responsible for CSR, the status of CSR policies and CSR promotion structures. Moreover, the Group checks that problems or violations are dealt with as they arise.

[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 2017, around 200 business partners from 100 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 22 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          |
|------|-----------------|
| 2014 | 509 million yen |
| 2015 | 437 million yen |
| 2016 | 541 million yen |
| 2017 | 600 million yen |

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

| FY   | Number of Employees |
|------|---------------------|
| 2016 | 25,381              |
| 2017 | 30,593              |

### 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: 2017 (AGC Group)

| Category                         | Amount          | Rate |
|----------------------------------|-----------------|------|
| Support for the next generation  | 333 million yen | 55%  |
| Harmony with local communities   | 167 million yen | 28%  |
| Natural environment conservation | 55 million yen  | 9%   |
| Others                           | 44 million yen  | 7%   |

#### ● Expenditures by Use: 2017 Results (AGC Group)

| Purpose of Use                             | Amount          | Rate |
|--|-----------------|------|
| Donations, material donations              | 285 million yen | 48%  |
| Employee participation and dispatch        | 208 million yen | 35%  |
| Voluntary programs                         | 58 million yen  | 10%  |
| Opening of facilities, acceptance of tours | 48 million yen  | 8%   |

## Key topics for “Society” (Social Contribution Activities)

### AGC Flat Glass Klin and AGC Bor Glassworks

#### Supporting Local Children and Residents through Community Activities

For the past five years, AGC Flat Glass Klin has supported events in which Santa Claus pays visits to hospitals and schools in the city of Klin, Russia, where the company is based. Over 20,000 people from Klin and the surrounding area take part in the events every year, which also feature a New Year masquerade.

Before the event last year, the company donated insulated glazing glass to three kindergartens and one school in the Klin district on the eve of September 1, known as Knowledge Day in Russia. A soccer team comprising employees from both AGC Bor Glassworks and AGC Flat Glass Klin also plays matches to raise money as part of the event.



Children from Klin at the residence of Ded Moroz<sup>1</sup>  
<sup>1</sup> Ded Moroz means Santa Claus in many Slavic languages



AGC football team in Russia

### AGC Flat Glass (Thailand) Public]

#### AFT Supports Students with AGC Homeland Development Project

AGC Flat Glass (Thailand) Public (AFT) provides support to economically disadvantaged art students through skill-developing activities involving art, Thai massage and music. In addition to offering educational opportunities and assistance from volunteers (including Federation of Thai Industries, Local Wisdom Communities, general volunteers who are kind and helpful in supporting society and AGC Employees, whom we call AGC G-Ambassadors — G meaning good), AFT helps the students sell artwork, give massages and hold music performances to earn money for their education.

Since 2015, AFT has been carrying out new support activities through its Successor Development Project, allowing the first generation to develop the next generation and expand educational opportunities, building on first generation talent within Thailand. In addition, together with AGC Chemicals (Thailand), AGC Automotive (Thailand) and AGC Technology Solutions (Thailand), AFT not only fosters the artistic, massage and musical ability of talented students, but also helps them gain practical skills through initiatives that develop leadership and entrepreneurial aptitude.



AGC G-Ambassadors encourage Thai students to continue challenging themselves

## AGC Display Glass Taiwan

### Promoting Activities for Supporting the Development of Local Children and Students

AGC Display Glass Taiwan (ADT) is engaged in various initiatives for supporting the development of children and students in Taiwan. For example, since its 10th anniversary in 2010, ADT has been organizing employee volunteer activities and providing funding for an orphanage in Yunlin County, where the company is based.

ADT has also been holding the AGC Japanese Presentation Contest for Taiwanese university students since 2014, with the goal of developing the skills they need for succeeding at companies doing business in both Japan and Taiwan. Each year, students participating in the contest hone their presentation and Japanese language abilities by giving a presentation in Japanese on a common topic.

In addition, ADT held a picture-painting contest for elementary school students in Yunlin County in 2015 as part of its local social contribution activities and in commemoration of its 15th anniversary. Owing to the popularity of the event, ADT held it again in 2016 in an effort to deepen its ties with the local community.



Children participating in the picture-painting contest in Yunlin County

## Asahi Glass Fine Techno Korea

### Contributing to Local Elementary School Children and Senior Citizens' Livelihood

Since 2010, AGC group companies in Korea have been donating books to three elementary schools with the goal of supporting the intellectual development of local children. They have also jointly held a book report contest since 2011. The book reports are judged by children's authors, and scholarships are awarded to children who receive top awards or awards of excellence.

In addition to these activities, group company employees have been distributing handmade winter kimchi (spicy fermented vegetables) to economically disadvantaged children and senior citizens living alone under a program called Heartfelt Kimchi.



The children who participated in the book report contest



The book report contest



## AGC Flat Glass (Thailand) Public

### Tree Planting Initiatives Supported with Activities for Sustainability

Recognizing that it belongs to an energy-intensive industry, AGC Flat Glass (Thailand) Public (AFT) has been carrying out tree planting initiatives since 2003 to help protect biodiversity and address climate change. To encourage tree planting and biodiversity protection activities in local communities, AFT strives to raise awareness of the value of plants, and has created a book about herbs featuring species native to the Jumrung area in Rayong Province, where its factory is based.

From 2015 to 2017, AFT teamed up with three other group companies in the country—AGC Chemicals (Thailand) (ACTH), AGC Automotive (Thailand) and AGC Technology Solutions (Thailand)—to open two herb and botanical gardens at Suanpakhaochaang School in the province of Chonburi. In 2016–2017, AFT and ACTH developed students' knowledge of herbs through study with university instructors as a basic foundation, and learned about the usefulness of herbs to the school community with philosopher villagers.



Botanical garden school lesson held in cooperation with AGC group companies (Thailand)

## PT Asahimas Flat Glass Tbk (AMG)

### Working Together with Suppliers and the Local Community to Plant Trees in Indonesia

Reflecting its CSR policy of promoting environmental conservation and harmony with local communities, PT Asahimas Flat Glass Tbk (AMG) has established the Rose-Apple and Jackfruit Tree Plantation Program in a mining village in East Java, Indonesia. Through the program, AMG collaborates with its supplier of dolomite in the village to plant trees and teach local people about proper tree planting methods, both in theory and practice.

AMG will continue to help local people increase their income by harvesting and selling rose-apples and jackfruit from the trees, while contributing to environmental conservation in the region.



Participants in the tree planting event

## AGC China

## Sporting Events Contribute to Disabled Persons' Livelihood

In September 2017, AGC acted as a sponsoring company at the Mitsubishi Friendship Cup soccer tournament for disabled persons in Beijing, China. The chief representative of the AGC Group in China attended the opening ceremony of the final match. Under a mantra of supporting sports activities for the disabled, the tournament is a CSR activity directly linked to the China Disabled Persons' Federation. It provides a stage for disabled persons to compete and enjoy soccer, leading to further activity and participation in sports activities.



Teams compete at the Mitsubishi Friendship Cup soccer tournament for disabled persons

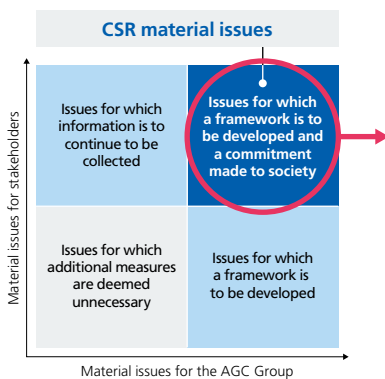


# Product Responsibility

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                  |  | 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>Response to climate change</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 Corresponding to Consumer Issues

### Protecting consumers' health and safety

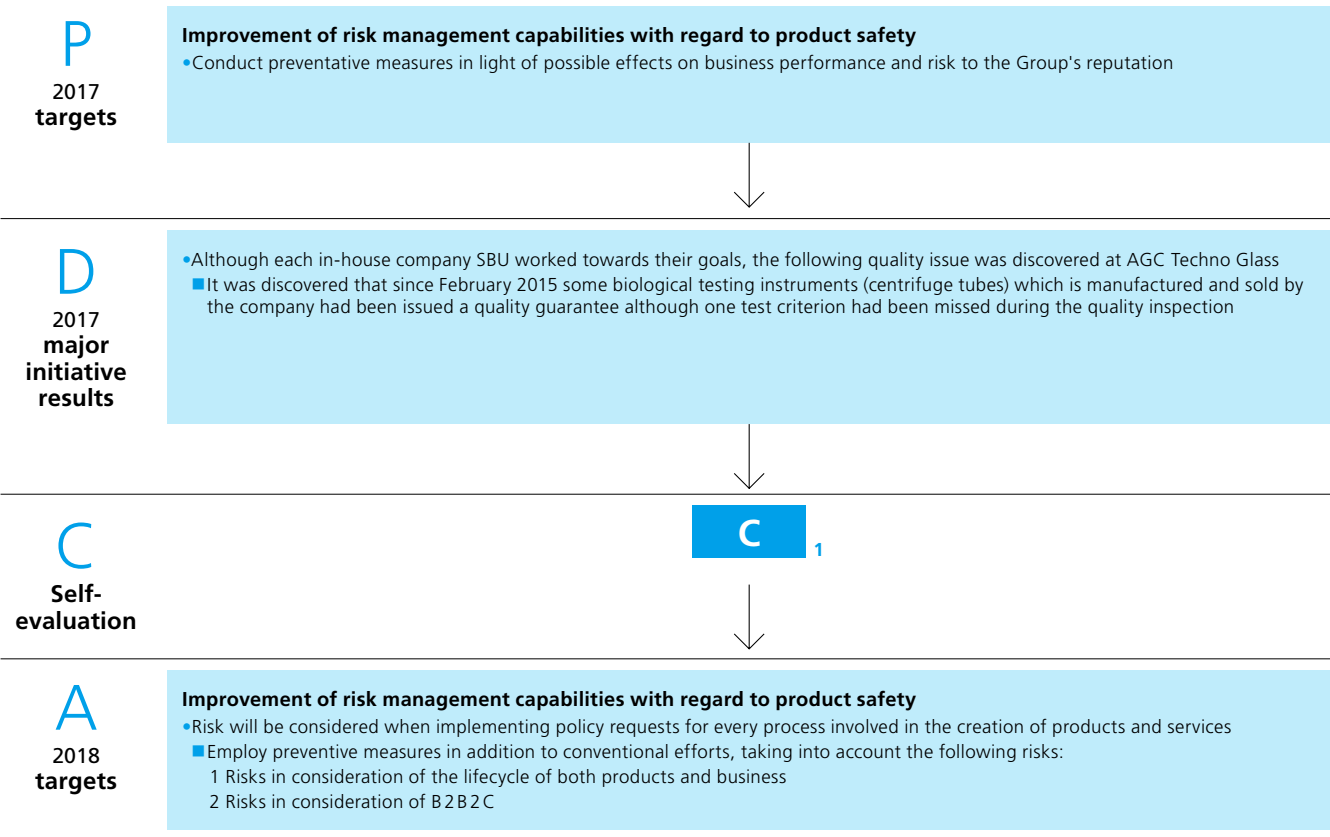
#### Reasons for Selection

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 Material Issues in 2017



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

<sup>1</sup> Reason for "C" Grade: A quality issue at AGC Techno Glass

## 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 2017, 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 2005, 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 2017

| Location                   | Number of certified organizations |
|----------------------------|-----------------------------------|
| Japan                      | 32                                |
| Asia other than Japan      | 27                                |
| Europe                     | 58                                |
| The Americas/South America | 15                                |
| <b>Total</b>               | <b>132</b>                        |

**Note** Percentage of AGC Group employees at the certified organizations: 85.5%  
<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

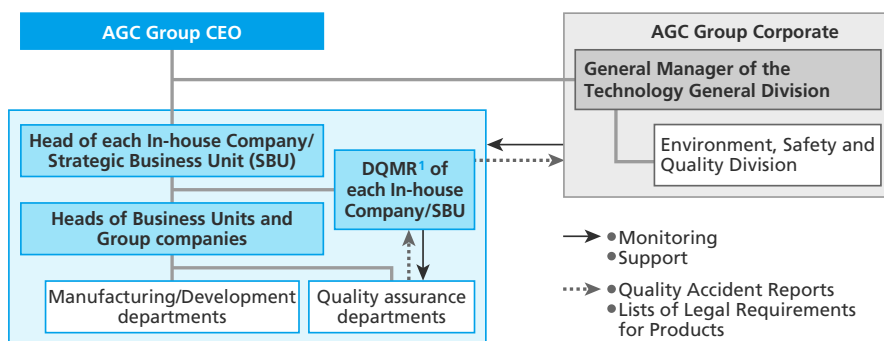
The AGC Group will continue to create the expected value by pursuing "Innovation & Operational Excellence" as one of the Shared Values in the Group Vision "Look Beyond".

#### 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

---

## 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.

### 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.

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

## Product Safety Initiatives

---

### Fundamental Approach

---

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.

---

### Management Structure

---

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.

---

### Group-wide Initiatives

---

#### 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.

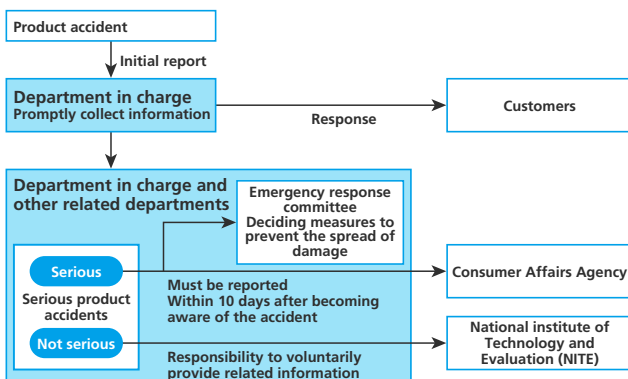
Study meetings are held to allow the employees in charge at related Group divisions to foster product safety.

In fiscal 2017, 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 |
|------|-----------------|
| 2013 | 1               |
| 2014 | 0               |
| 2015 | 1               |
| 2016 | 1               |
| 2017 | 0               |

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



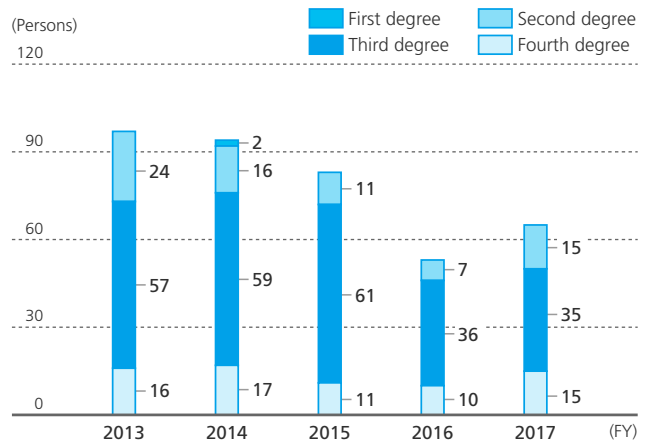
Implementing Quality Training

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 2017, 65 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)



## 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, 2017, 8,091 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.

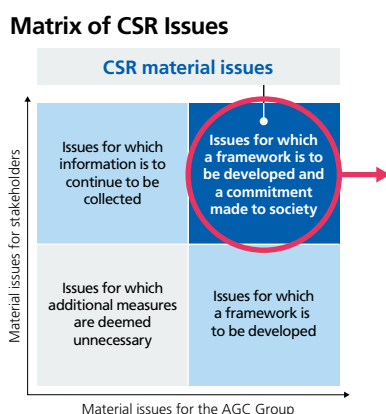
The Building & Industrial Glass Company (Japan) has established a customer center for architectural glass to respond accurately to inquiries from customers in the building industry, as well as regular customers. The Building & Industrial Glass Company (Europe) also produces websites for customers in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



## 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>Response to climate change</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 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

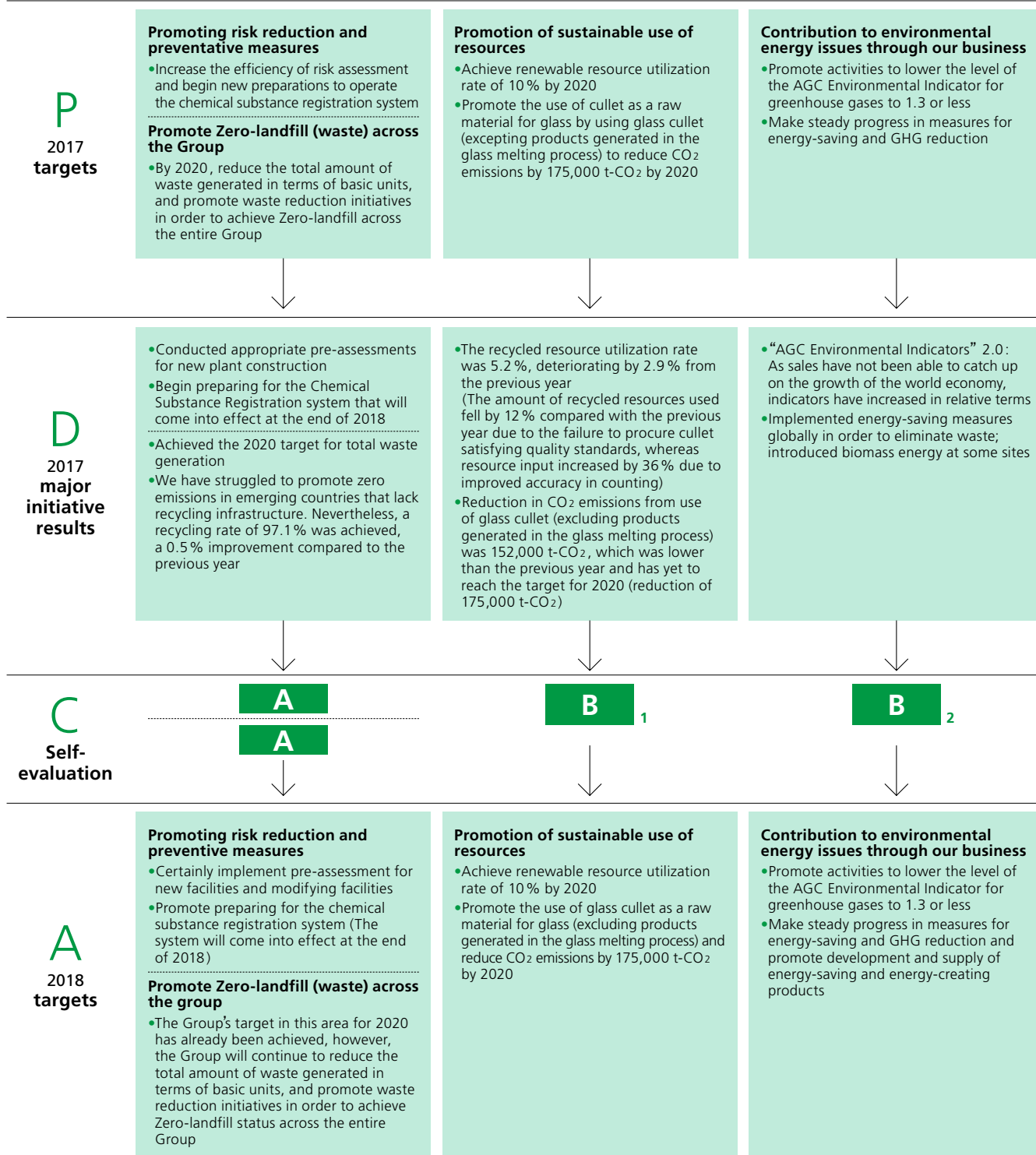
The demands and expectations of society regarding corporate initiatives to work for climate change issues is rising, to the extent that corporations are being requested to disclose their efforts for climate change and the amount of GHG emissions.

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 Material Issues in 2017



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

<sup>1</sup> Reason for B evaluation: The recycled resource utilization rate and percentage reduction in CO<sub>2</sub> emissions through glass cullet use fell in comparison to the previous year  
<sup>2</sup> Reason for “B” Grade: The AGC Environmental Indicators increased in relative terms

## Environmental Management

### Fundamental Approach

The AGC Group has positioned the environment as a top management priority. Recognizing that its operations have considerable environmental impact, the AGC Group Basic Environmental Policy is established to guide business activities with consideration to the environment.

#### The AGC Group's Basic Environmental Policy

(Established on February 9, 2001 and revised on January 1, 2017)

##### Basic Policy

Recognizing that it uses a relatively large amount of natural resources and energy in its activities, the AGC Group has designated the environment as one of the Shared Values in the Group Vision, **"Look Beyond"** and acts to protect the environment wherever possible.

As a global material and component provider, we shall contribute to the development of a sustainable society through:

- Effective use of limited natural resources and energy, and
- Consideration of the influence of our activities on the natural environment including climate change and biological diversity.

##### Guidelines for Environmental Activities

The AGC Group will set environmental objectives and implement environmental activities based on the following Guidelines throughout our business activities.

1. We will make continuous improvements based on the Integrated Environmental Management System.
2. We will comply with compliance obligations (all regulations and standards prescribed by environmental laws, ordinances, treaties and agreements).
3. We will take steps to reduce environmental impact and to prevent pollution.  
We will set voluntary targets regarding resource conservation, climate change mitigation and adaptation, waste reduction and recycling, and the proper control of chemicals. We will work to accomplish these goals while making further improvements.
4. We will develop and provide eco-conscious products, technologies, services, and facilities for society in all areas of our activities.
5. We will actively communicate with interested parties about all aspects of our environmental activities.

### Management Structure

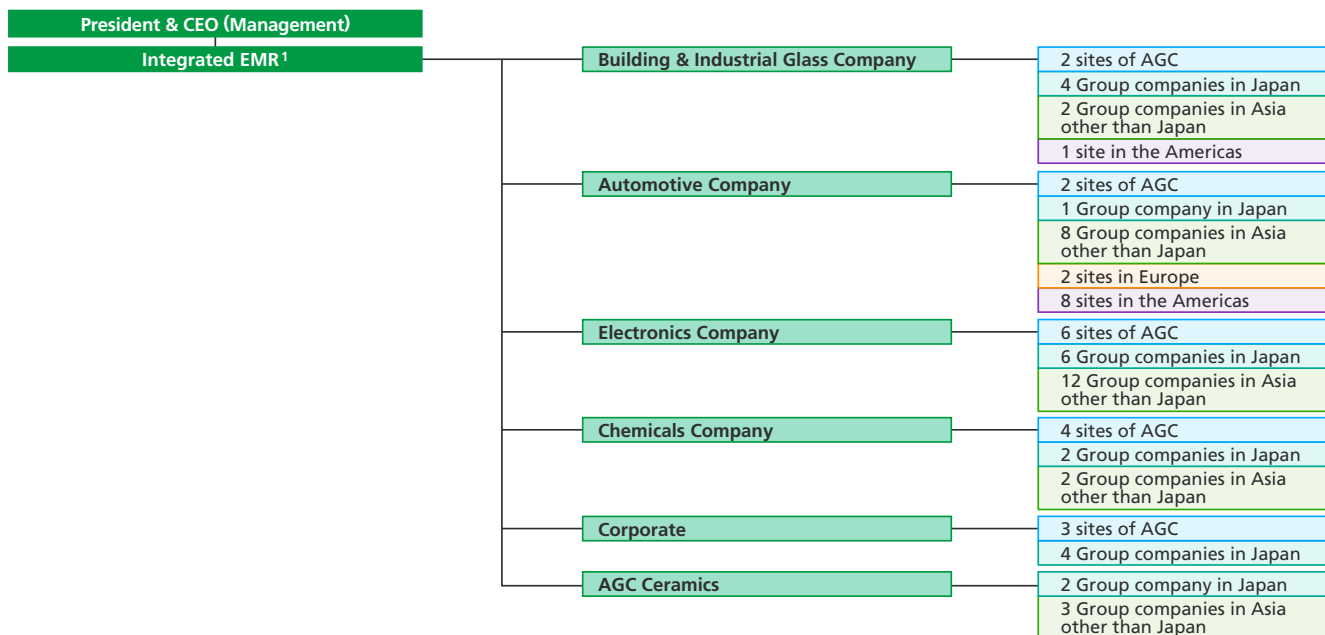
In 2000, the AGC Group launched its "Consolidated Business Management for Environment and Safety (Environment and Safety Consolidated Management)," targeting worldwide consolidated companies engaged in manufacturing. AGC supervises and supports Environment and Safety Consolidated Management and aims to disseminate the Group's environment and safety policy within Group companies that are a target for Environment and Safety Consolidated Management. AGC also assesses their performance and implements improvement measures. Further, it provides communication and response support in the incident of an occupational accident or emergency situation and conducts audits of affiliated companies. Companies newly joining the AGC Group through M&As or otherwise are included in the Environment and Safety Consolidated Management system when they become consolidated.

The Group has acquired ISO 14001 certification as necessary for each company that is a target for Environment and Safety Consolidated Management, has built up its integrated environmental management system (Integrated EMS) since 2003 and has obtained integrated ISO 14001 certification across the entire Group. The objectives of Integrated EMS are as follows: (1) to carry out environmental activities on an operation-wide basis, rather than independently at each site, by integrating EMS in each business division and (2) to preemptively determine the effects of the Group's entire operations on the environment. This includes not only individual sites but also the head office, sales divisions, and R&D divisions in the EMS framework, extending from product design and assembly line organization through to manufacturing and transportation, enabling the Group to reduce the environmental impact of its products over their entire lifecycle.

Each division works to attain the goals and plans set out in the Integrated EMS, and progress is evaluated by management through an Integrated EMS review. Furthermore, audits are conducted based on international standards by the same certifying organization in Japan, determining the level of environmental management activities in each country and region where the Group operates. Management makes use of the results of these reviews and external inspections when drafting policies and plans for the following fiscal year to ensure that environmental management activities continuously improve.

Since 2013, the Group has been using the EHSQ (Environment, occupational Health & Safety and Quality; see page 7) Management System constructed for integrated management of EHSQ efforts across consolidated companies belonging to the Group, not just Group companies engaged in manufacturing.

● Integrated EMS Organization Chart (As of December 31, 2017)



**Note** For plants and Group companies belonging to more than one In-house Company/SBU, the above numbers are indicated per In-house Company/SBU in duplication.  
**Note** Organizations incorporated into the Integrated EMS are each ISO 14001-certified, undergoing examinations by a single external certification body based on the same examination criteria. (As of the end of April 2018, some sites are undergoing audits by external certification bodies, and are acquiring certification through the promotion systems outlined above.)

<sup>1</sup> Environmental Management Representative

● ISO 14001-Certified Manufacturing Plants

As of April 30, 2018

[Including three companies that should obtain certification by September 2018]

| Location                                 | No. of manufacturing plants | No. of certified manufacturing plants (No. of plants incorporated into the Integrated EMS) |
|--|-----------------------------|--|
| AGC                                      | 11                          | 10 (10)  |
| Group companies in Japan                 | 91                          | 68 (66)  |
| Group companies in Asia other than Japan | 38                          | 31 (31)  |
| Group companies in Europe                | 110                         | 53 (9)   |
| Group companies in the Americas          | 32                          | 14 (14)  |
| <b>Total</b>                             | <b>282</b>                  | <b>175 (130)</b>   |

**Note** As for non-manufacturing sites, a total of 53 locations are ISO 14001-certified (including the Integrated EMS).

**Note** The AGC site that does not have certification only conducts solar power generation

**Note** Group company sites that do not have certification are (1) no longer manufacturing products, (2) sites with low environmental impact, such as assembly and processing sites for glass products, or (3) sites incorporated into the Group through M&As currently establishing a system to obtain certification.

Group-wide Initiatives

Risk Reduction at Each Plant

Using risk assessment methods, the AGC Group quantitatively evaluates risk factors hidden in business activities and takes countermeasures, beginning with high-risk items.

When constructing, expanding or modifying facilities that are above a certain size, the Group conducts risk assessment in regard to occupational health and safety, environment, industrial safety and security prevention 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<sup>1</sup> or other means.

In 2012 and 2013, the Group implemented the Serious Accident Eradication Project (see page 39) to expose issues regarding molten glass leaks, fires or explosions which pose a particularly large risk across the Group and proposed countermeasures. Since 2014, the Group has taken the results of the above project and created concrete countermeasures within its business divisions. These are applied across the entire Group, including the coordination of efforts with business continuity plans (BCPs; see page 18). Furthermore, via the EHSQ management system, the Group supervises the extent to which the countermeasures determined in the Serious Accident Eradication Project have been applied.

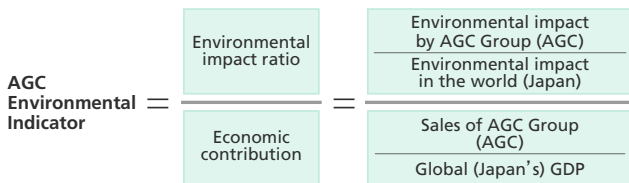
<sup>1</sup> An abbreviation for "Hazard and Operability Study," HAZOP is a safety evaluation method that identifies deviation from design plans and produces an exhaustive list of causes and remedial actions.

## Environmental Impact

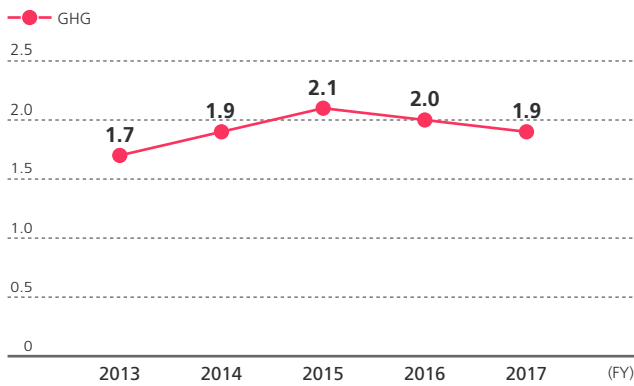
### “AGC Environmental Indicator” to Determine Environmental Impacts

The AGC Group formulated “AGC Environmental Indicator” in order 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

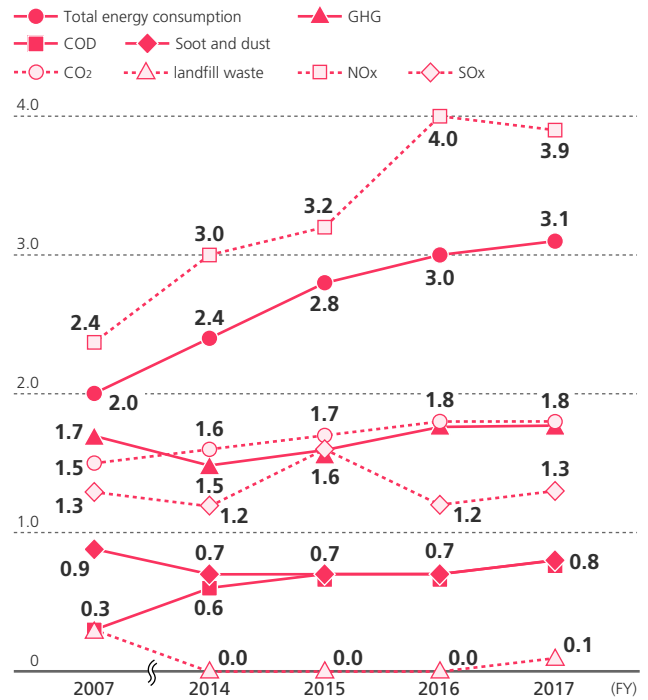


#### ●AGC Environmental Indicator (AGC Group)

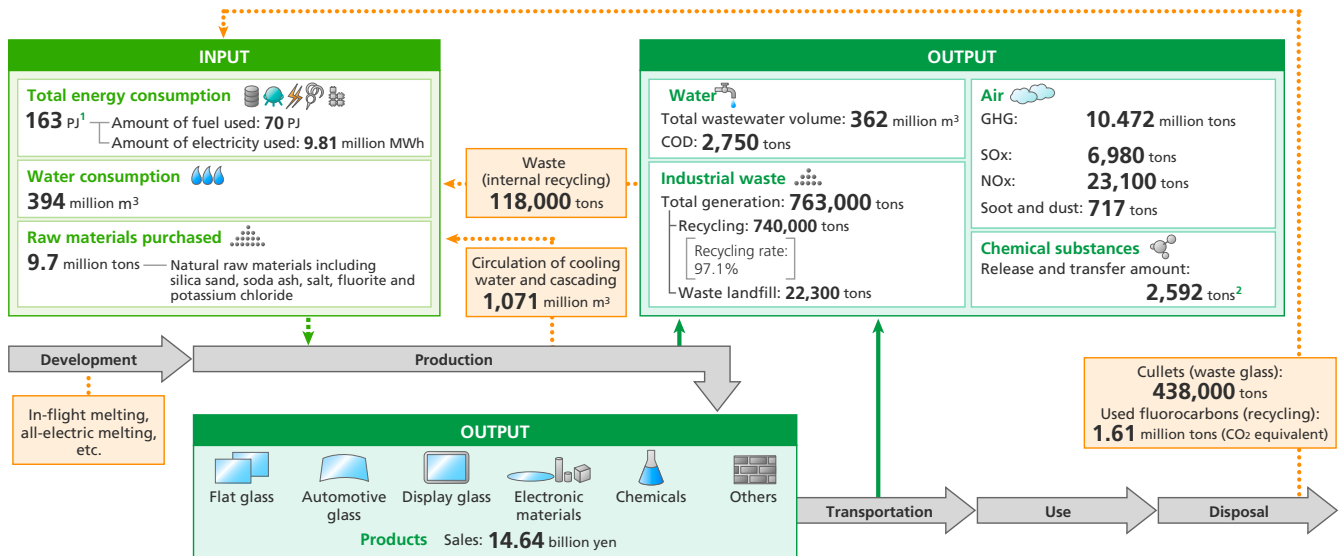


**Note** Economic contributions are calculated in USD against the AGC Group’s overall revenue and global GDP.

#### ●AGC Environmental Indicator (AGC)



● Material Balance (AGC Group)



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

<sup>1</sup> PJ (peta joule) = 1015 J (joule)

<sup>2</sup> Total emissions of substances regulated by the PRTR Act (in 2016)

## 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   |
|------|------------|--------|
| 2015 | 15,854     | 41,529 |
| 2016 | 13,800     | 45,900 |
| 2017 | 18,800     | 48,300 |

**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 | +6 PJ                                       | +4%                  | +3%                                 |
| Greenhouse gas emissions | +406,000 t-CO <sub>2</sub>                  | +4%                  | +3%                                 |
| Waste landfill           | -1,557,000 t                                | -7%                  | -6%                                 |
| COD discharge            | -37 t                                       | -1%                  | -1%                                 |
| SOx emissions            | -1,130 t                                    | -17%                 | -15%                                |
| NOx emissions            | +4,990 t                                    | +22%                 | +19%                                |
| Soot and dust emissions  | -350 t                                      | -48%                 | -42%                                |

<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 = (2017 output volume) – (2016 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 = (2017 sales)/(2016 sales) = 14,635/12,826=1.14

## Response to Climate Change

### Fundamental Approach

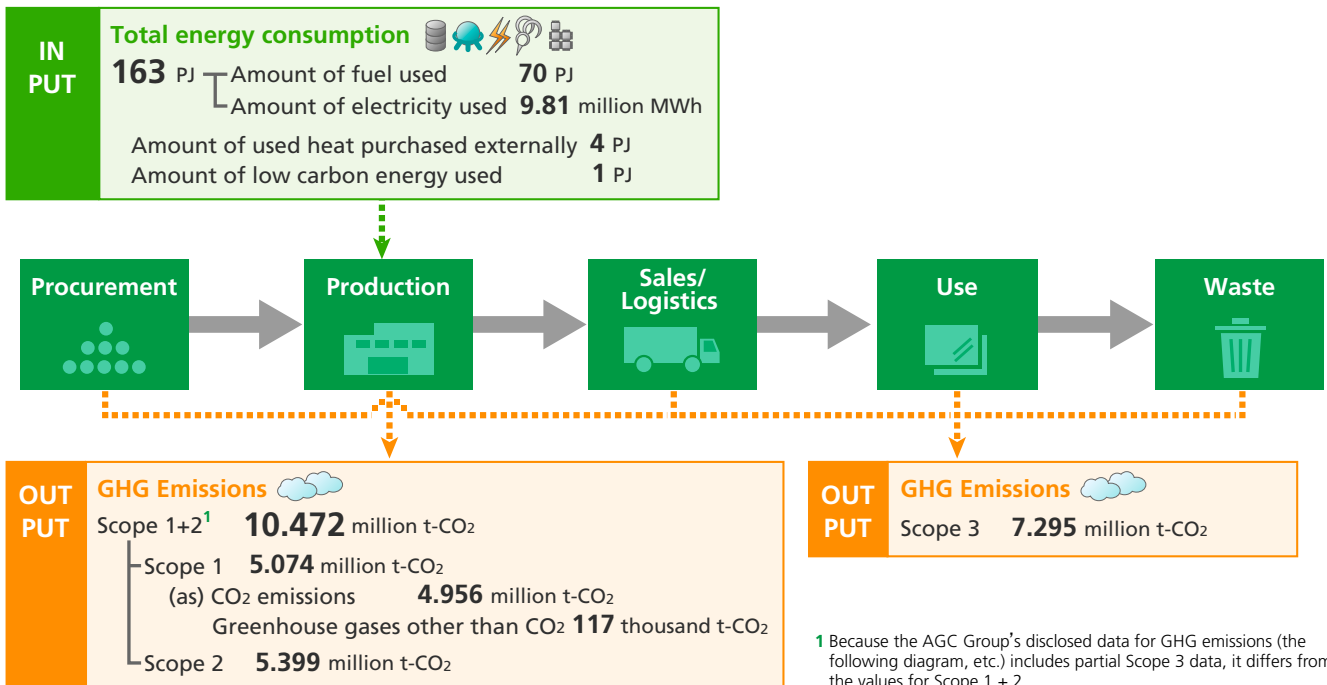
Knowing that it is part of an energy-intensive industry, the AGC Group is working to reduce greenhouse gas emissions over the entire product lifecycle, from procurement through production, sales and logistics, use and disposal, and is contributing towards the realization of a sustainable society.

At sites at risk from damage from heavy rains, floods, water shortages or tsunamis due to climate change, the Group

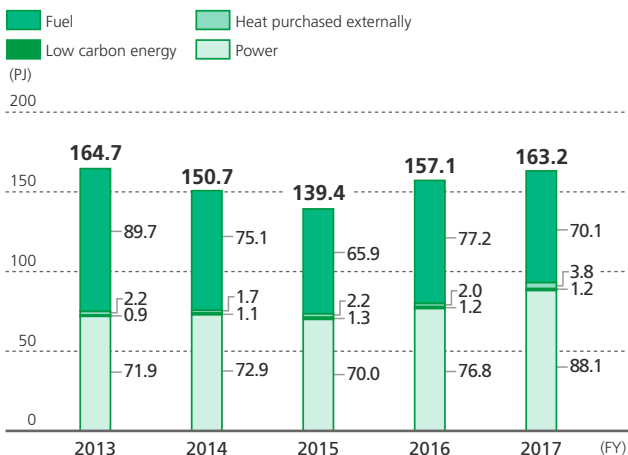
recognizes the risk posed to its business activities (see page 18), and formulates a Business Continuity Plan (BCP) to minimize possible damage, among other measures.

Furthermore, considering measures to confront climate change as a new business opportunity, the Group actively develops and sells products such as low energy glass that prevents or reduces damage related to climate change.

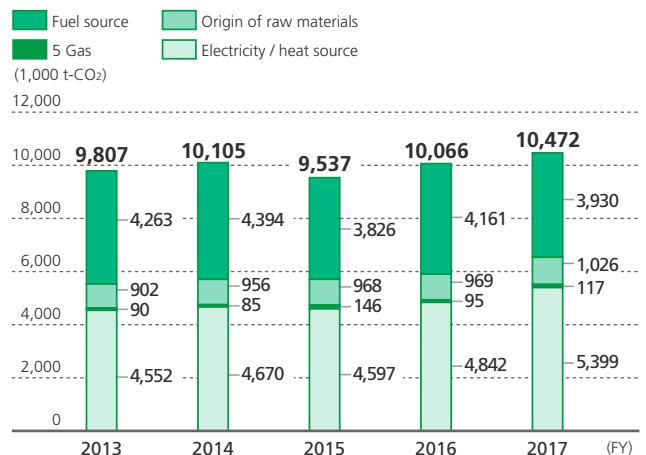
#### ●2017 Energy-Related Material Balance (AGC Group)



#### ●Trends in Total Energy Inputs



#### ●Trends in GHG Emissions



**Note** Due to rounding, the percentage sum for each item does not necessarily amount to 100%.

**Note** In FY2017, the Group began displaying information on greenhouse gases (GHG) based on the origin of the gas, rather than the location in concern. Accordingly, the figures from 2013 to 2016 have been recalculated in the same manner.



## Group-wide Initiatives

### Energy Conservation and CO<sub>2</sub> Reduction in the Manufacturing Process

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

The Group is principally promoting energy conservation activities in production processes, introducing cogeneration systems, simplifying the exhaust gas treatment process by fuel conversion from heavy oil to natural gas, improving production processes through total oxygen combustion and other techniques, and conducting utility-related energy conservation assessments.

At present, to respond to rising infrastructure demands in Asian regions, the AGC Group is increasing the production capacity of its local glass and chemicals businesses. In order 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 Production Processes (AGC Group)

| Input   | 2016  | 2017         |
|---|-------|--------------|
| Electricity used (million MWh)                                    | 8.58  | 9.81         |
| Fuel used (PJ)  | 77.2  | 70.1         |
| Amount of heat purchased externally (PJ)                          | 2.0   | 3.8          |
| Amount of low carbon energy used (PJ)                             | 1.2   | 1.2          |
| Output  | 2016  | 2017 (Note)★ |
| GHG Emissions: Scope 1 (million t-CO <sub>2</sub> )               | 5.225 | 5.074        |
| GHG Emissions: Scope 2 (million t-CO <sub>2</sub> )               | 4.842 | 5.399        |
| CO <sub>2</sub> Emissions: Scope 1+2 (million t-CO <sub>2</sub> ) | 9.972 | 10.355       |

**Note** GHG emissions in FY2017 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). Part of the fluorine-based gas calculations use the emission factors of the GHG protocol. The boundary of the data includes AGC and 108 domestic and overseas group companies.

### Reduction of Fluorocarbons in Production 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 23,900 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.

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

Based on the Law Concerning the Discharge and Control of Fluorocarbons (effective 2015), AGC has since FY2015 calculated and reported to the government any leakage of fluorocarbons. In FY2015 and FY2016 respectively, the figures reported were 9,556 t-CO<sub>2</sub> and 10,238 t-CO<sub>2</sub>. Considering this result to be significant, the Group is striving to reduce leakage by identifying points of leakage, implementing leakage prevention measures including repair and maintenance of leaking parts, strengthening inspections based on laws and regulations and improving facility and refrigerant volume management.

Also, aging refrigerators will be updated sequentially to state-of-the-art refrigerators that use refrigerants with low GWP values.

### 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.

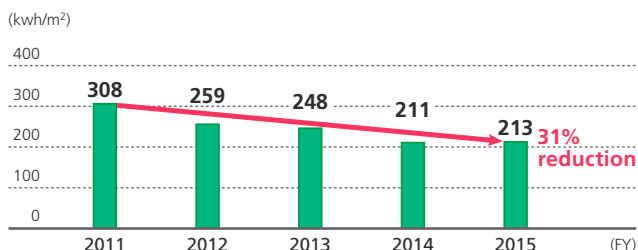
Also, the AGC Glass Europe company office building in Belgium, which was completed in 2014, employs insulation, heat shields and highly transparent glass that minimize the need for air conditioning and lighting. Also, electricity generated by solar and geothermal power is utilized to offset energy use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

At the AGC Kashima Plant, the company began construction of an office building 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.

● Reduction of Energy intensity at Offices (per floor area)



**Note** Applies to major office buildings in Japan, Europe and the Americas. In 2011, the AGC Group set a goal of a 25% reduction in energy consumption per unit area in Group offices by 2015. By working on energy conservation in the offices, a 31% reduction was made, exceeding the target. Since then, the 2015 levels have been maintained.

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 Greenhouse Gas Emissions (AGC Group)

| FY                                 | Scope 3 |
|------------------------------------|---------|
| 2014 (million t-CO <sub>2</sub> )  | 7.090   |
| 2017 (million t-CO <sub>2</sub> )★ | 7.295   |

**Note** GHG emission levels 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 to the right.

| Category | Overview   | Calculation method   |
|----------|--|--|
| 1        | Purchased goods and services   | Emissions calculated by multiplying resource input volume of product production by the emission intensity <sup>1</sup> per material.   |
| 2        | Capital goods  | Calculated by multiplying the amount of capital investment related to capital goods by the emission intensity <sup>1</sup> 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 <sup>1</sup> 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. <sup>1</sup> |
| 5        | Waste generated in operations  | Calculated by multiplying the amount of externally disposed waste by the emission intensity per treatment method. <sup>1</sup>   |
| 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. <sup>1</sup>  |
| 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. <sup>1</sup>   |
| 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 <sup>1</sup> , 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. <sup>1</sup>  |
| 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.  |

<sup>1</sup> 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.2.5) (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.

AGC Glass Europe 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. AGC Glass Europe also 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.

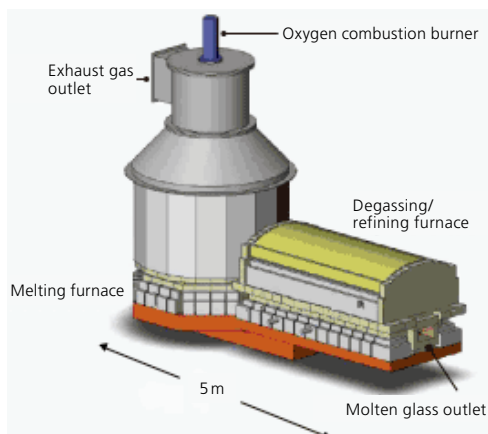
## Examples of Energy Conservation Activities

### Development of In-flight Melting Technology

In glass manufacturing, the melting process consumes a particularly large amount of energy. Accordingly, the AGC Group aims to reduce the CO<sub>2</sub> emissions from this process by half. To this end, the Group has joined a national research project<sup>1</sup> for developing new in-flight melting technology. In-flight melting is a method to melt granular glass materials in a high temperature environment produced by gas/oxy combustion flames and plasma, which could reach up to 10,000°C. This instantly completes the melting process, and also enables a much smaller melting furnace to be used, both improvements that reduce environmental load.

In this project, techniques are being developed for various kinds of glass. Using a small furnace that produces one ton of general-purpose glass per day, the goal of consuming the world’s smallest amount of energy for glass—namely, the specific energy consumption of 900 kilocalories per kilogram of glass—is in sight. At present, the Group is aiming to put the in-flight melting technology into practice at a small-scale continuous test facility, given the clear possibility of applying the technology to LCD glass.

<sup>1</sup> Research commissioned by the New Energy and Industrial Technology Development Organization (NEDO)



A furnace used for in-flight melting for general-purpose glass

### 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 production 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

## Expansion of Photovoltaic Panel Installation in Europe

The AGC Glass Europe (AGEU) Group is installed photovoltaic panels in its plants and buildings, aiming at reducing energy consumption. The amount of power generated in 2017 was 8,880,000 kWh, corresponding to 1% of the Group's power consumption.



Photovoltaic panels at the Cuneo Plant (Italy)

### ● Main 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                 |

## Photovoltaic Panel Installation in Japan

The AGC Group has installed photovoltaic panels at three Japanese sites to promote their effective use on company property, and to realize energy conservation and energy creation through AGC products. Furthermore, the Group is contributing funds to solar power generation projects. In 2017, 25,810,000 kWh of power were generated through photovoltaic panels.

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

| Sites                    | Installation Year | Power Generated (kWh)                 |
|--------------------------|-------------------|---------------------------------------|
| Takasago Plant           | 2013              | 5,060                                 |
| Enesee Hibi (Kitakyushu) | 2014              | 11,002<br>(Amount contributed by AGC) |
| Ako Plant                | 2015              | 4,260                                 |
| Namamugi Warehouse       | 2016              | 624                                   |

## Use of Renewable 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.

## Reduction of Natural Resources Usage

Mixing waste glass cullet in with raw materials allows the manufacture of glass with less energy when compared to using only natural raw materials, such as silica sand. The AGC Group is working to achieve its 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>, thus reducing CO<sub>2</sub> emissions in the manufacturing process.

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

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

| FY                                       | AGC Group | AGC |
|--|-----------|-----|
| 2014 (1,000 t-CO <sub>2</sub> )          | 178       | 41  |
| 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  |
| 2020 (Target) (1,000 t-CO <sub>2</sub> ) | 175       | 60  |

<sup>Note</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 sustainable resource utilization. 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 water-related targets, and the status of target achievement is monitored across the entire Group.

### 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 80% of this is seawater used for indirect cooling. Of the fresh water that makes up 20% 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. The Group also promotes the use of rainwater at some European sites.

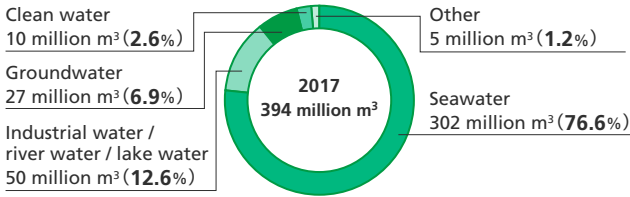
#### Preventing Water Pollution

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

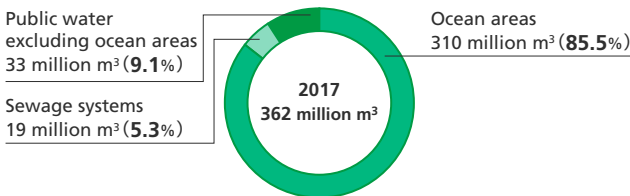
#### Our Products bring Effective Use of Water

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.

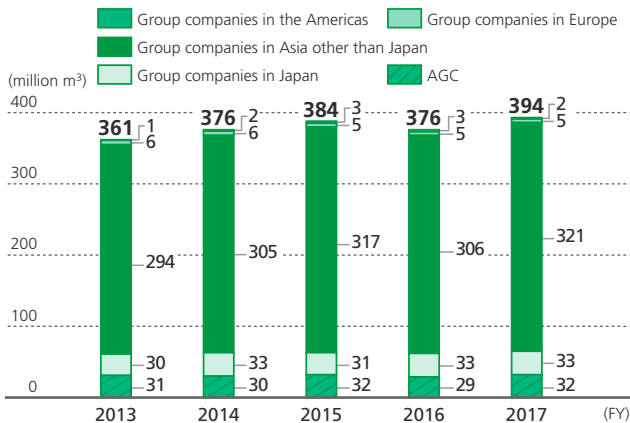
● Total Water Intake (AGC Group)



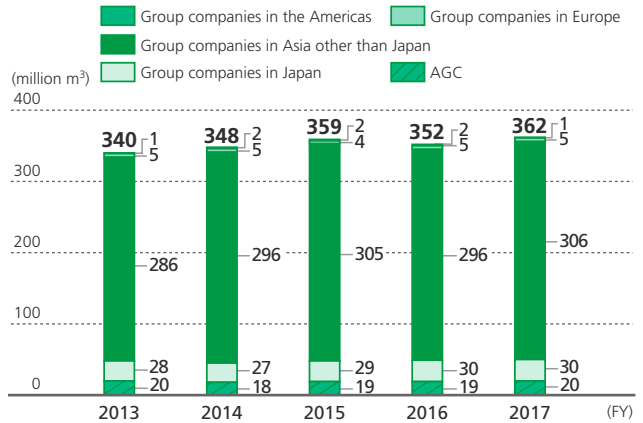
● Total Wastewater (AGC Group)



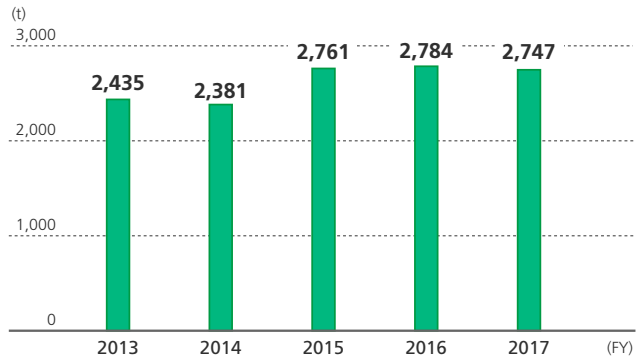
● Trends in Total Water Intake (AGC Group)



● Trends in Total Water discharge Wastewater (AGC Group)



● Trends in COD discharge (AGC Group)



Initiatives at Individual Companies

Preventing Water Pollution

At AGC, the target value for AGC's COD-related<sup>1</sup> AGC Environmental Indicator has been set at 0.3, and global efforts are being made to prevent water pollution.

<sup>1</sup> Chemical Oxygen Demand is the amount of oxygen consumed to oxidize organic matter in water with oxidizing agents.

Disclosure of Water Consumption in Product Life Cycles

More and more consumers are choosing to purchase environmentally friendly products. To provide information to consumers and users on the environmental impact of the Group's products throughout their lifecycle, the AGC Glass Europe (AGEU) Group has begun to voluntarily issue environment-related third-party certifications (Environmental Product Declarations, EPD) on some products. Meanwhile, in 2015, the Group acquired Cradle<sup>1</sup> silver certification, recognizing the company's appropriate water management for its float glass.

<sup>1</sup> The certificate is awarded on the basis of five assessment categories, including "Use of sound materials" and "Appropriate water management."

## Chemical Substances 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.

### Group-wide Initiatives

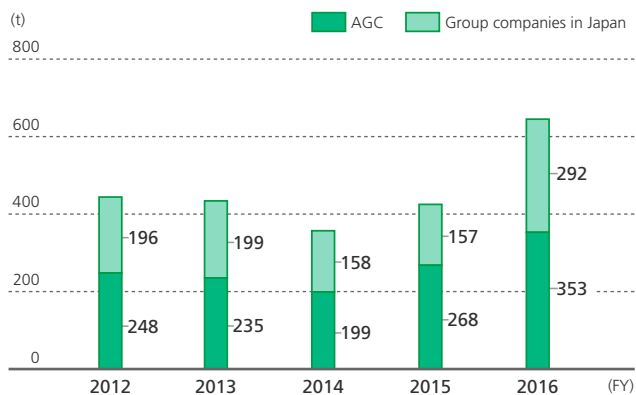
#### Management of Chemical Substances

##### Initiatives at the Manufacturing Phase

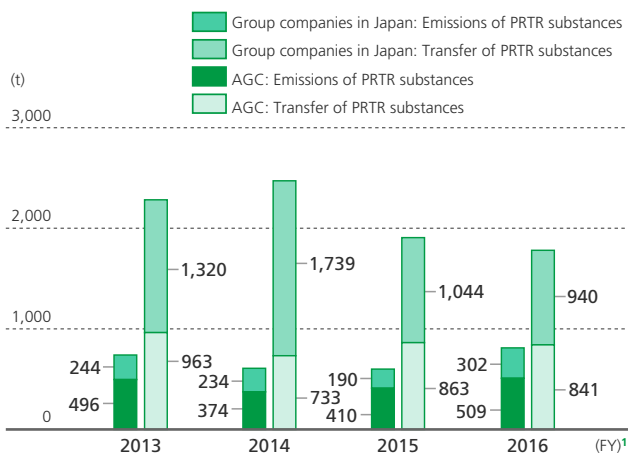
The AGC Group observes laws and regulations related to the management of chemical substances, and has established the AGC Group Chemical Substance Management Guidelines. Additionally, it manages the chemical substances used at each manufacturing site and assigns chemical substance managers to appropriately assess their respective risks. Much of the environmental pollution and health damage caused by chemical substances is attributable to inappropriate handling before substances come under regulation. Therefore, the AGC Group is establishing its own Chemical Substance Registration System that registers all chemical substances used by the Group, including those not regulated by law.

In addition, based on the PRTR Law, the AGC Group in Japan publishes emissions and transfer volumes of chemical substances discharged during the manufacturing process on its website, and is working to reduce emissions of target substances.

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



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



<sup>1</sup> 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 2018. 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).<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.

<sup>1</sup> A sheet with information regarding a chemical’s characteristics and handling methods, provided to a recipient of chemicals before receipt of the chemicals themselves.

<sup>2</sup> A system for global harmonization in classification and labeling of chemical products.

#### ● Number of issued SDS (as of March 31, 2018)

|                  | December 2017 | March 2018  |
|------------------|---------------|-------------|
| Japanese version | 1,971 types   | 1,972 types |
| English version  | 1,091 types   | 1,111 types |
| Chinese version  | 189 types     | 199 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 is proceeding with plans to register chemical substances in order of descending priority in 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 and the AGC Group in Japan respectively discontinued the use of electric devices that contained PCBs by the end of 2005 and 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. Furthermore, the AGC Group in Japan is committed to continue to process 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. Given the seriousness of these problems, the AGC Group is working hard to reduce environmental air pollutant emissions.

### Group-wide Initiatives

#### Reducing Environmental Air Pollutants from Business Activities

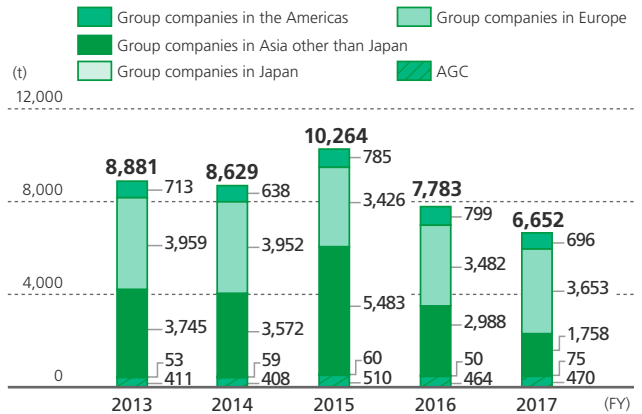
The AGC Group is proceeding with installation and upgrading of exhaust gas treatment facilities and improvements in measurement and analysis techniques at each Group site. The Group tracks annual changes in emissions and shares methods for general improvement and reducing emissions among manufacturing sites in the Group.

### Initiatives at Individual Companies

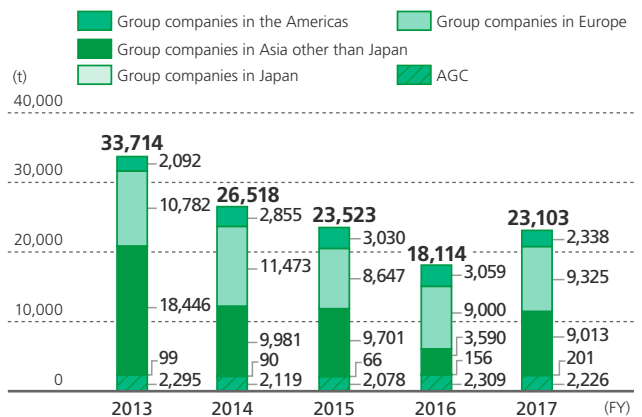
#### Complying with Regulations on SOx, NOx, Soot and Dust Emissions (China)

In China, environmental regulations are getting stricter every year, and 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 regulations on NOx, SOx, soot and dust.

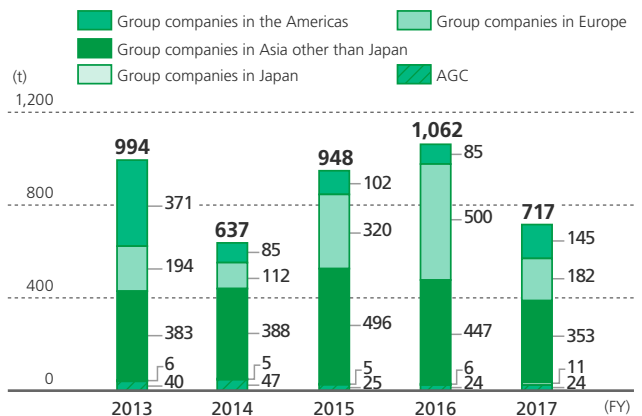
#### SOx Emissions (AGC Group)



#### 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 local residents. Assessing the situation and cleaning it up also requires incredible time and expense on behalf of parties involved. The effects of this manner of contamination are almost immeasurable. For this reason, the AGC Group has established the Guidelines for Prevention of Soil and Groundwater Contamination, going above measures required by law 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

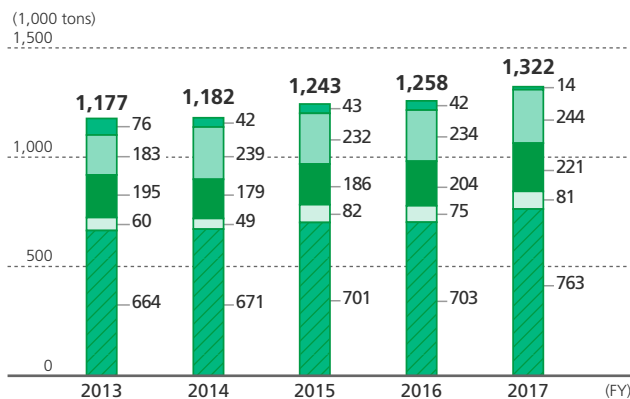
#### Promotion of Zero-landfill (waste)

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.

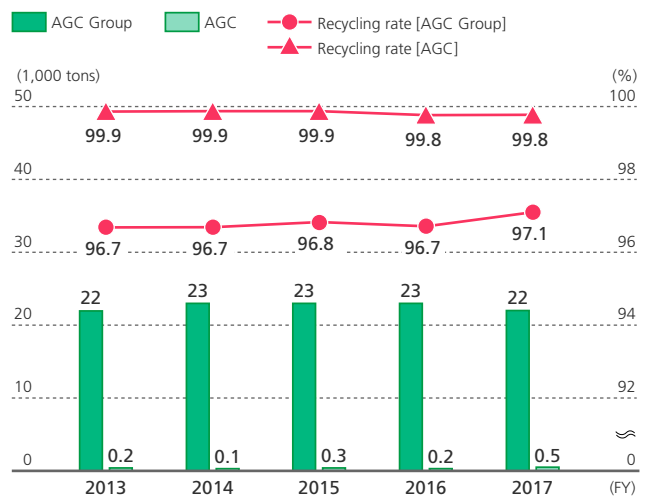
<sup>1</sup> Zero-landfill (waste) is defined as recycling more than 99% of waste.

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

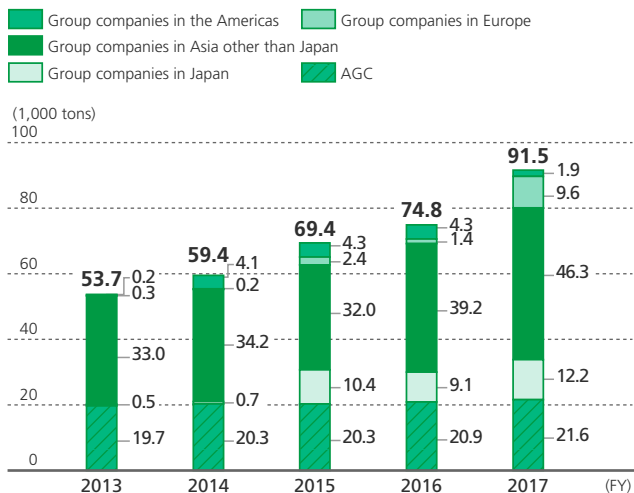
■ Group companies in the Americas    ■ Group companies in Europe  
■ Group companies in Asia other than Japan    ■ AGC  
■ Group companies in Japan



#### ● Waste Landfill and Recycling Rates



● Amount of Hazardous Waste Generation (AGC Group)



The manufacturing process for chemical products generates a large amount of byproduct oil. As this oil contains hazardous substances such as chlorine and fluorine, it is disposed of using designated refuse incinerators. A portion of these incinerators incorporate special boilers that recover heat in the process, contributing to energy-saving initiatives. In accordance with the Waste Disposal Law, AGC receives full permission for its industrial waste oil disposal facilities and manages them appropriately 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>. The Group is currently making efforts 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 (glass scraps) 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.

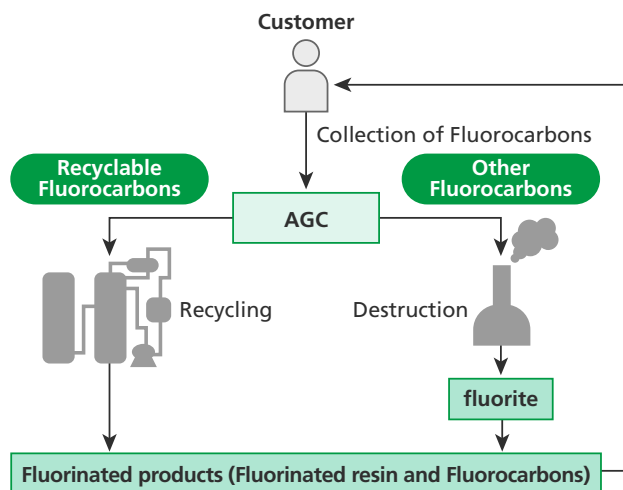
Recovery and Recycling of Fluorocarbons and Calcium Fluoride

The Chemicals Company 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 Group has been recovering used fluorocarbon products from customers, then destroying and recycling them at the AGC Chiba Plant. In 2017, fluorocarbons equivalent to approximately 1.61 million tons of CO<sub>2</sub> (approximately 1.68 million tons in 2016) were collected and destroyed. The calcium fluoride (fluorite) recovered through the destruction process is reused as raw material.

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 its Basic Environmental Policy, the AGC Group states that it will consider the influence of its activities on the natural environment, including biological diversity. AGC is also a promoting partner of the Nippon Keidanren (Japan Business Federation) Declaration of Biodiversity.

### 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 the Consideration for Biodiversity document, activities are being developed at sites across the Group.



Employees from the Chiba Plant volunteer at the Satoyama conservation event (tree thinning)

## 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

#### Environmental Education for Management Layer

To promote integration of environmental and business activities, the AGC Group occasionally holds environmental forums for management layer. In 2014, the Group held “EHS Forum 2014” with the aim of deepening knowledge of social trends and new management methods. Experts gave lectures including corporate management, environmental risks, recent information on accidents at chemical plants and safety management.

#### Training for Environment Officers

In order to reliably respond to environmental regulations that are being strengthened year by year, the AGC Group (Japan) stipulates that the Corporate Secretariat will train environment officers at each division and site to address new environmental regulations deemed necessary. In 2015, such officers were trained in preparation for regulation of mercury and strengthening of Freon regulations, and in 2016 and 2017, training was provided based on the 2015 edition of ISO 14001.

#### 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 FY 2016, 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.

In 2017, this training was conducted at two company sites on the theme of preventing and mitigating soil and groundwater pollution.

#### Training in Security and Disaster Prevention

The AGC Group (Japan) 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 plans to conduct reciprocal plant visits amongst these personnel, boosting their skills as well as plant disaster prevention and security management levels.

## Reducing Environmental Impact throughout Product Life Cycles

### Fundamental Approach

The AGC Group recognizes the importance of evaluating the burden placed on the environment by its products and reducing environmental burden throughout a product's lifecycle. This applies not only to the production process but also at stages of material collection, product distribution, use and disposal. With this in mind, the Group has established a slogan with the aim of offsetting six times the amount of CO<sub>2</sub> emitted at the time of manufacturing by 2020, through the Group's 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 consumers and users to preferentially purchase eco-friendly products.

The AGC Group manufactures and sells environmental products, and is proceeding with acquiring third party certification for them. 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

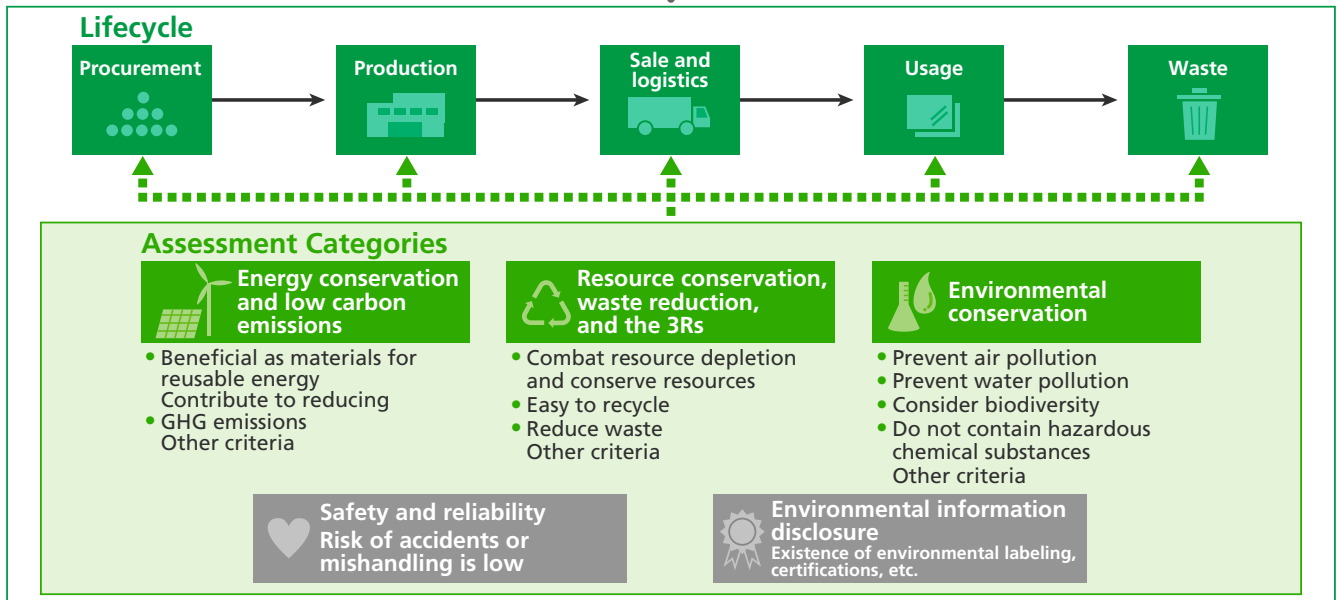
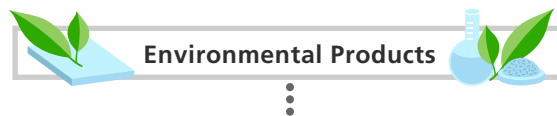
Guided by the AGC Group Basic Environmental Policy, the AGC Group strives to develop and provide environmental products, technologies, services, and installation techniques in consideration of their impact on the environment.

Specifically, products conforming to the AGC Group Environmental Product Guidelines are selected as environmental products. From the design stage, the Group promotes product development based on these Guidelines and, at each stage of product lifecycle, evaluates products in three categories, "energy conservation and low carbon emissions," "resource conservation, waste reduction and the 3 Rs" and "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

#### 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

##### [Lightjoule™ \(Ultra-lightweight Photovoltaic Module\)](#)

Light and Durable Glass Solar Panels for Architectural and Industrial Use that Weigh Half as Much as Conventional Panels and Maintain Power Generation Capacity

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

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

##### [Leoflex™ \(Chemically Strengthened Specialty Glass\)](#)

Stronger than Conventional Glass and Highly Crack-Resistant Despite Its Thinness, this Chemically Strengthened Specialty Glass Helps Reduce the Weight of Solar Cells and other Items

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

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

#### Window Films

##### [X-3 Series of High-Transmission Heat-Shielding Window Films](#)

Cutting Infrared Rays and Helping to Reduce the Consumption of Energy in Air Conditioning

#### 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

##### [AsahiGuard™ E-SERIES \(Fluorinated Water and Oil Repellents\) / Fluon® PTFE E-SERIES \(Fluoropolymers\)](#)

Fluorinated Products Containing No Perfluorooctanoic Acid

##### [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 Basic Industry Safety & Security Policy

(Established on February 7, 2003 and revised on January 1, 2017)

In the pursuit of **“Look Beyond”**, the AGC Group actively engages in the following activities for industrial safety and disaster prevention management, which are part of its responsibility as a corporate citizen trusted to develop initiatives in local communities.

1. The AGC Group will comply with all laws, ordinances, treaties and standards etc., concerning industrial safety and security, both nationally and locally.
2. The AGC Group will carry out activities for industrial safety and security to prevent accidents or disaster from occurring, and will strive for continual improvement.
3. The AGC Group will make efforts to communicate with stakeholders, including the local community.

### 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.

Based on the action plans drawn up by the corporate organization, the Environment, Safety and Quality Division, each business division will promote fire prevention, countermeasures for industrial safety accidents and risk assessment for natural disasters. 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

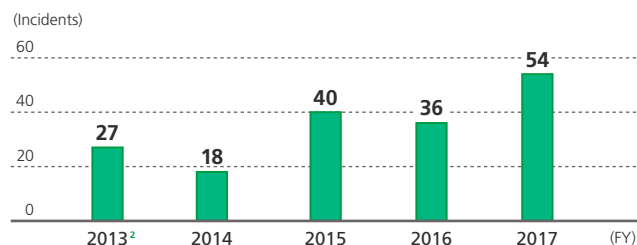
When constructing, expanding or modifying facilities that are above a certain size, the Group conducts industrial safety and security-related risk assessment and confirms the intrinsic safety of the facility based on the Group's Prior Safety Assessment System. This occurs at the design stage and also 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

Under Environment and Safety Consolidated Management, 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 2017, 54 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.

<sup>2</sup> Collection of worldwide data began in 2013. Some Group companies in Europe were not subject to data collection.

#### Prevention of Security Incidents

In order 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 is also planning appropriate 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 worldwide 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 the headquarters

# Key topics for “Environmental”

## AGC China

### Support for Environmental Improvements in China

AGC China Holdings (AGCH) has been actively supporting initiatives for improving the natural environment in China. In 2015, it jointly held a seminar entitled “Green City, Better Life” together with the Shanghai Advanced Research Institute (SARI) of the Chinese Academy of Sciences and the Tongji Green Building Council (TGBC). At the event, AGCH showcased over 40 products from various AGC Group businesses through display panels.

Meanwhile, continuing from last year, AGCH participated in the annual Japan-China Energy Conservation and Environmental Research Forum, jointly held in Tokyo by Japan’s Ministry of Economy, Trade and Industry, the Japan-China Economic Association, the National Development and Reform Commission in China and China’s Ministry of Commerce. AGCH gave a presentation about power conservation projects in China’s glass manufacturing industry, in which it described successful initiatives for conserving energy in glass production lines. Having declared its intention to cooperate in energy-conservation and environment projects in China, AGCH is committed to helping the country’s glass industry save energy alongside its local partners.



The “Green City, Better Life” Seminar

## Chemicals Company

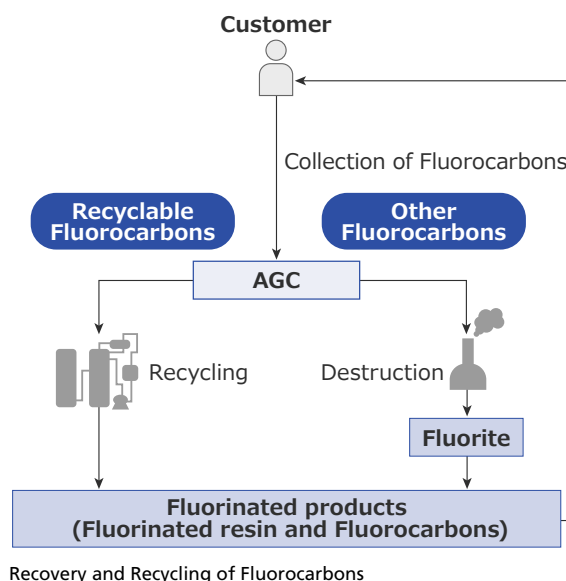
### Promoting the Reuse of Calcium Fluoride

The Chemicals Company has been actively engaged to collect and reuse of calcium fluoride (fluorite), which is a key raw material for fluorinated products. Since it is one of the natural resources distributed unevenly in the world, Japan depends greatly on imports from China. For that reason, the Chemicals Company has been recovering and reusing the calcium fluoride, which is contained in waste water and gases generated at its own manufacturing processes, and which is recovered from its customers’ wastewater treatment processes for hydrofluoric acid.<sup>1</sup>

Furthermore, the AGC Chiba Plant acquires fluorocarbon products from customers via fluorocarbon collection services, extracts the calcium fluoride by destructing the products and reuses it as a raw material.

In 2017, the plant collected and destroyed fluorocarbon products equivalent to approximately 1.61 million t-CO<sub>2</sub> (approximately 1.68 million t-CO<sub>2</sub> in 2016).

<sup>1</sup> The Chemicals Company was awarded the 2014 METI Minister Award, the highest prize in the Resource Recycling Technology and System Awards. The awards were created by the Japan Environmental Management Association for Industry, and are given annually to recognize projects and initiatives that apply advanced technologies and systems for controlling waste generation (reduce), reusing discarded materials (reuse) and effectively using reclaimed resources (recycle).





## AGC Glass Europe

### Reducing Environmental Impact by Switching to Railway Logistics

In order to reduce its environmental impact, the AGC Glass Europe (AGEU) Group switched shipments of silica sand and soda ash, which are raw materials for making glass, from truck to rail. AGC France's Boussois Plant established a new unloading station within the plant, enabling deliveries to be made by rail from February 2014.

Through these efforts, AGEU reduced 4,000 annual truck trips to 77 rail trips, reducing CO<sub>2</sub> emissions by about 250 t-CO<sub>2</sub>. Furthermore, fewer fine dust particles were emitted by the plant, and surrounding roads became safer due to decreased traffic. In recognition of this initiative, the Boussois Plant received an environmental performance award in France in 2014.



Railway within AGC France's Boussois Plant

## AGC Group

### Increasing Numbers of Plants Installing Photovoltaic Panels

The AGC Glass Europe (AGEU) Group is installing photovoltaic (PV) panels at its various plants and buildings. After the first photovoltaic (PV) panels were installed in 2009 at f | glass GmbH (Germany, 10 MWh produced per year) and 2010 at AGC Flat Glass Italy (4,151 MWh/year), other PV projects started at other sites, including the Zeebrugge Plant (Belgium, 507 MWh/year) in 2011 and the Mol Plant (Belgium, 260 MWh/year) in 2012. PV panels were also installed in 2013 at AGC Automotive Italy (1,114 MWh/year) and the Fleurus Plant (250 MWh/year) and Moustier Plant (233 MWh/year) in Belgium. The total output of AGEU's photovoltaic installations now averages 6,544 MWh per year.

Additionally, in 2013 around 900 PV panels were installed on the roof of the new AGC Europe headquarters in Belgium. These produce 153 MWh/year, which offsets the energy consumed by heating, cooling and lighting.



Photovoltaic panels at the AGC Flat Glass Italy

## AGC Glass Europe

## AGC Glass Europe's Headquarters Receives BREEAM "Excellent" Rating

AGC Glass Europe's (AGEU) headquarters building in Belgium is a nearly-zero energy building, meaning it has very high energy performance. The energy that the building does require comes mostly from renewable sources.

The building's roof features around 900 photovoltaic (PV) panels mounted to provide additional electricity (around 200,000 kWh per year) covering the building's energy needs. The building also emphasizes natural lighting to reduce energy consumed by interior lighting. Geothermal energy is used to heat and cool the building, and rainwater is used for sanitary purposes, outdoor cleaning and gardening activities. All wood used in construction is certified by PEFC (Program for the Endorsement of Forest Certification). Plants used in landscaping are local varieties, and biodiversity initiatives to be carried out in the garden are currently under review.

In light of the above features, the AGEU building has also acquired BREEAM (Building Research Establishment Environmental Assessment Method) certification. BREEAM is a system of certification established to assess buildings in terms of efficient utilization of energy, water and other resources. In 2015, the AGEU building passed a post-construction review resulting in a final certificate with a rating of "Excellent."



AGC Glass Europe's new headquarters

## AGC Glass Europe

## Promoting Initiatives to Reduce Water Usage and Prevent Water Pollution

AGC Glass Europe (AGEU) has been working to reduce the amount of water used at its facilities and has implemented specific actions to reduce consumption, such as reusing and recycling water, along with efforts to combat leakages. These initiatives have brought a 71% decrease in water use since 1998, resulting in total water consumption of around 5.1 million m<sup>3</sup> in 2016.

Water used for industrial purposes at AGEU is drawn largely from surface water, not drinking water. Additionally, over 90% of the water is used in cooling systems that operate in a closed loop, drastically minimizing water use.

AGEU strives to reduce pollution of industrial wastewater during production through curbing emissions of metals and other means. The plants at AGEU are equipped with wastewater treatment equipment, and also limit and replace toxic substances used in Mirox New Generation Ecological mirror production, resulting in a 95% reduction in water pollution.



Storm water recovery system in Seingbouse, France.

## AGC Group

## Establishing a Chemical Substance Management System

The AGC Group has been working to improve the management of chemical substances at all worksites that use them.

Accordingly, when conducting risk assessments of chemical substances, the Group uses its own globally applicable standardized assessment method, which is based on the Globally Harmonized System of Classification and Labeling of Chemicals.

Furthermore, it provides regular training to relevant managers, and implements measures for improving the capabilities of management across the entire Group, starting with each production plant.



Chemical Substance Risk Assessment training

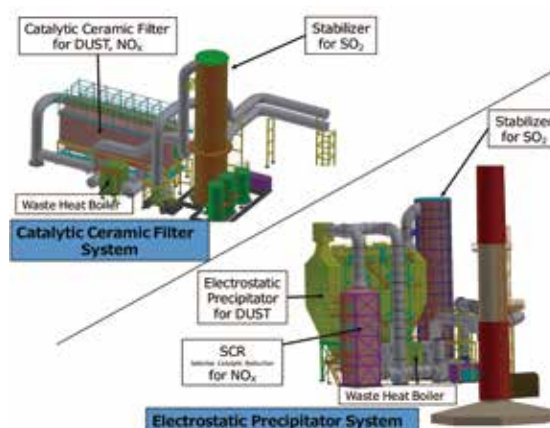
## AGC Group

## Helping Reduce Air Pollution in China by Providing Denitrification Technology to Local Glass Manufacturers

In an effort to reduce air pollution, China's Ministry of Environmental Protection made it mandatory for glass manufacturing plants in Hebei Province and the cities of Beijing and Tianjin to install desulfurization, denitrification and dust filtration equipment, as well as online monitoring systems for those facilities, effective from April 2014.

Against that backdrop, the AGC Group cooperated with local engineering companies to provide local glass manufacturers with denitrification technology it had developed for processing glass melting furnace exhaust gas. By assisting the other companies, the Group has been helping to address China's air pollution problem.

The AGC Group's flue gas denitrification equipment has been used over many years at its manufacturing plants and is compatible with melting furnaces that use low-quality heavy oil, which contains many impurities. Due to remote data monitoring and after-sales service systems, the equipment has been evaluated highly, leading to increased installations.



Equipment fitted with catalytic ceramic filters

## AGC Glass Brazil

### Implementing New Technologies to Reduce Environmental Impact

In Brazil, consumption of energy and natural resources is expanding with economic growth, and coping with environmental problems has become an urgent issue. AGC Glass Brazil (AGBR) aims to reduce the environmental burden of production processes by introducing state-of-the-art technology to their glass production plant that began operation in 2013.

Specifically, AGBR equipped glass melting furnaces in South America with the latest fume treatment facility units, lowering particle emissions to less than 1/10th of regulation levels set by Brazil's National Environment Council (CONAMA). In addition, SOx and NOx emissions are also kept below these standards.

AGBR also uses glass melting furnaces to combust organic compound gases emitted in the coating process, reducing emissions of volatile organic compounds (VOCs). It has also installed a system for recycling and recirculating cooling water, reducing the amount of water consumed in the manufacturing process.



AGC Glass Brazil's Guaratinguetá Plant

## AGC Group (Asia including Japan)

### Using Returnable Pallets for Shipments Between Factories

In Japan and throughout Asia, the AGC Group is using returnable steel pallets that can be used repeatedly for shipping unprocessed automotive glass sheets between factories. The Group replaced the wooden crates it had previously used for shipping with these packing materials, which it developed in-house, in order to reduce the amount of lumber it uses and help preserve biodiversity.

Since first adopting the pallets in Japan in 2000, the Group has expanded their usage to its operations in China and across Southeast Asia. At present, the returnable pallets are being used for almost all of the Group's automotive glass products, with the exception of irregularly shaped items. In 2015, the pallets were used in approximately 98.5% of all shipments between Group companies to and from Japan.



The AGC Group's independently developed returnable pallets



Empty pallets compactly stacked together upon their return

## AGC Group (Japan)

## Proactive Use of Paper that Contributes to Sound Forest Management by Thinning

The AGC Group actively uses paper made from the pulp of wood from thinned forests, based on its Basic Environmental Policy of considering the influence of its activities on the natural environment, including biodiversity. The price of the paper includes the cost of tree thinning in forests carried out by an environmental NPO in Japan called Mori no Chonai-Kai<sup>1</sup>. The Group purchases and uses the paper in an effort to support periodic tree thinning, which is needed for revitalizing healthy forests.

In 2017 about seven tons of the paper were used, mainly for public relations publications including the AGC Report as well as in-house pamphlets and employee business cards. To date, the Group has used a cumulative total of over 187 tons of the paper, equivalent to an area of about 13.5 hectares of thinned forest (or approximately three times the area of Tokyo Dome a baseball stadium in Tokyo, Japan).

<sup>1</sup> Neighborhood Forest Association



AGC Report 2018

## AGC Group (Japan)

## Forest Volunteer Activities

In Japan, the AGC Group promotes volunteering by employees and their families in forest management and tree thinning<sup>1</sup> events, with the goal of raising awareness towards forest conservation and biodiversity.

In 2011, employees and former members of the AGC Chiba Plant formed the AGC Satoyama Group, registered as a river conservation organization active the city of Ichihara, Chiba Prefecture.

In the same city, AGC Engineering has been carrying out woodland conservation activities since a declaration to contribute to the community and the environment on its 50th anniversary, in 2009. The company's employees and their family members volunteer in woodland conservation activities held four times annually in the city's Bunka no Mori forest. By clearing brush around commemorative trees in the forest, the volunteers forge friendships, help raise awareness of the natural environment and promote harmony between nature and the community.

<sup>1</sup> Tree thinning involves cutting down crooked and weak trees among densely spaced trees in a forest, facilitating sound growth of the remaining trees by allowing more sunlight to enter.



Members of the AGC Satoyama Group, including AGC Group employees and their families



Volunteers at the Satoyama conservation event in Bunka no Mori forest

## AGC Group (Japan)

### Supporting the Ecological Activities of Employees and their Families

The AGC Group has introduced a matching gift program<sup>1</sup> using revenue collected from vending machines at AGC headquarters. The money is donated to NGOs working to replant coastal forests in the city of Natori, Miyagi Prefecture, which suffered catastrophic damage from the Great East Japan Earthquake. Additionally, every year Group employees in Japan support NGOs that conduct tree planting activities in developing countries by contributing to a charity program called Bellmark.

In recognition of these environmental initiatives incorporating the everyday activities of employees and their families, Tokyo's Chiyoda Ward, where the Group's headquarters is located, awarded the company a special prize for actions against global warming in February 2017. Also, the headquarters was recognized as a designated tenant by the Tokyo Metropolitan Government's Green Building Program, given the rank of "AAA" through an energy conservation evaluation for such designated tenants in 2015. The Group continues to endeavor in many different energy conservation initiatives.

<sup>1</sup> Through the matching gift program, companies and individual groups make donations or contributions to further a social cause. The AGC Group has also introduced this program, and makes donations on top of employee contributions.



AGC Group receives special prize for actions against global warming in 2017

## AGC Glass Europe

### AGEU' s laminated Glass Products Acquire Silver-level Cradle to Cradle Certification

In 2013, the AGC Glass Europe (AGEU) laminated glass products Stratobel and Stratophone earned the Cradle to Cradle (C2C) Certified™ Silver certificate. The Cradle to Cradle Certified™ product standard recognizes achievements in the use and re-use of safe and healthy materials, renewable energy, water stewardship, and evaluation and certification of products that contribute to social responsibility. When AGEU first obtained C2C certification in 2010 for its float glass and coated glass products, it was the first glass manufacturer in Europe to do so. In 2013, the Silver level certificates for float glass, coated glass and decorative glass were successfully renewed. In 2017, certifications for float glass and magnetron coating were also renewed. Additionally, a Gold level certification was newly obtained for patterned glass—a first for AGC.

Certified products are also eligible for certification credits under the Leadership in Energy and Environmental Design (LEED) green building rating system, and thus can help customers looking to improve the environmental rating of their buildings.



Cradle to Cradle Certificate for Stratobel and Stratophone

## AGC Asia Pacific

## AGC Products Certified as Singapore Green Building Products —a First for a Glass Manufacturer in Singapore

In 2013, AGC Asia Pacific became the first glass manufacturer to receive SGBP product certification under the labeling scheme of the Singapore Green Building Council. The interior glass certification was renewed in 2017 and received an even better SGBP rating.

This certification evaluates the environmental performance of building materials in the fields of energy efficiency, water efficiency, resource efficiency, health and environmental protection and other green features. Moreover, buildings that use products with SGBP labels can earn points through Singapore's Green Mark building rating system.



Singapore Green Building Council certificates for AGC products

## AGC Group

## Highest BCM Rating Acquired from the Development Bank of Japan

In 2013, the AGC Group received the highest rating of A for its business continuity management (BCM) from the Development Bank of Japan. Based on an original evaluation system developed by the bank, the BCM rating reflects a comprehensive assessment of a corporation's ability to continue operating during a disaster, including its disaster prevention measures as well as strategies and systems for dealing with the crisis aftermath. The AGC Group was highly evaluated for establishing business continuity planning (BCP) guidelines, conducting relevant audits of its operations, providing BCP training to managers and implementing BCM initiatives covering the supply chain.



BCP training for managerial employees



## 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, 2017 to December 31, 2017 included in its CSR Activity Report (Detailed) 2018 (the “Report”) for the fiscal year ended December 31, 2017.

### 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 Kashima 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 23, 2018



# GRI Index

This CSR Activity Report (Detailed) is a tool for non-financial information disclosure (sustainability reporting), and is based on the Core option of the version 4.0 of the Sustainability Reporting Guidelines (G4).

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

### ‘In Accordance’ Criteria for Core option of G4

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

## General Standard Disclosures (Core option)

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

### Strategy and Analysis

| Section | Indicator  | Link   |
|---------|--|--|
| G4-1    | Provide a statement from the most senior decision-maker of the organization (such as CEO, chair, or equivalent senior position) about the relevance of sustainability to the organization and the organization’s strategy for addressing sustainability. | <b>CSR Top Message</b><br><b>AGC plus (Video)</b><br><b>AGC plus</b> |

### Organizational Profile

| Section | Indicator  | Link  |
|---------|--|---|
| G4-3    | Report the name of the organization.   | <b>AGC Report 2018 (P.6)</b><br><b>Company Profile</b>  |
| G4-4    | Report the primary brands, products, and services.   | <b>AGC Report 2018 (P.5-10, P.17-26)</b><br><b>Company Profile</b>  |
| G4-5    | Report the location of the organization’s headquarters.  | <b>AGC Report 2018 (P.6)</b><br><b>Company Profile</b>  |
| G4-6    | Report the number of countries where the organization operates, and names of countries where either the organization has significant operations or that are specifically relevant to the sustainability topics covered in the report.  | <b>Our Network</b>  |
| G4-7    | Report the nature of ownership and legal form.   | <b>AGC Report 2018 (P.35-37)</b><br><b>Corporate Governance</b>   |
| G4-8    | Report the markets served (including geographic breakdown, sectors served, and types of customers and beneficiaries).  | <b>AGC Report 2018 (P.5-10, P.17-26)</b><br><b>Company Profile</b>  |
| G4-9    | Report the scale of the organization, including: <ul style="list-style-type: none"> <li>• Total number of employees</li> <li>• Total number of operations</li> <li>• Net sales (for private sector organizations) or net revenues (for public sector organizations)</li> <li>• Total capitalization broken down in terms of debt and equity (for private sector organizations)</li> <li>• Quantity of products or services provided</li> </ul>   | <b>AGC Report 2018 (P.5-10, P.17-26)</b><br><b>Financial Review</b><br><b>Company Profile</b>   |
| G4-10   | a. Report the total number of employees by employment contract and gender.<br>b. Report the total number of permanent employees by employment type and gender.<br>c. Report the total workforce by employees and supervised workers and by gender.<br>d. Report the total workforce by region and gender.<br>e. Report whether a substantial portion of the organization’s work is performed by workers who are legally recognized as self-employed, or by individuals other than employees or supervised workers, including employees and supervised employees of contractors.<br>f. Report any significant variations in employment numbers (such as seasonal variations in employment in the tourism or agricultural industries). | Human Resources Management<br><b>CSR Activity Report (Detailed) 2018 (P.25)</b><br>Global Promotion of Diversity<br><b>CSR Activity Report (Detailed) 2018 (P.32)</b> |

|       |   |   |
|-------|---|---|
| G4-11 | Report the percentage of total employees covered by collective bargaining agreements.   | Respect for Human Rights<br><b>CSR Activity Report (Detailed) 2018</b> (P.27-28)  |
| G4-12 | Describe the organization's supply chain.   | Procurement Policy<br><b>CSR Activity Report (Detailed) 2018</b> (P.51)<br>Material Issues: Social Responsibility in the Supply Chain<br><b>CSR Activity Report (Detailed) 2018</b> (P.51-52)<br>Supply Chain<br><b>CSR Activity Report (Detailed) 2018</b> (P.51-52) |
| G4-13 | Report any significant changes during the reporting period regarding the organization's size, structure, ownership, or its supply chain, including: <ul style="list-style-type: none"> <li>• Changes in the location of, or changes in, operations, including facility openings, closings, and expansions</li> <li>• Changes in the share capital structure and other capital formation, maintenance, and alteration operations (for private sector organizations)</li> <li>• Changes in the location of suppliers, the structure of the supply chain, or in relationships with suppliers, including selection and termination</li> </ul> | Not applicable  |

## Commitments to External Initiatives

| Section | Indicator  | Link  |
|---------|--|---|
| G4-14   | Report whether and how the precautionary approach or principle is addressed by the organization.   | <b>Financial Review</b> (P.9-11)<br>Risk Management<br><b>CSR Activity Report (Detailed) 2018</b> (P.18)  |
| G4-15   | List externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses.   | CSR Promotion System<br><b>CSR Activity Report (Detailed) 2018</b> (P.7)<br>Local Communities, NGOs/NPOs, Governments<br><b>CSR Activity Report (Detailed) 2018</b> (P.8) |
| G4-16   | List memberships of associations (such as industry associations) and national or international advocacy organizations in which the organization: <ul style="list-style-type: none"> <li>• Holds a position on the governance body</li> <li>• Participates in projects or committees</li> <li>• Provides substantive funding beyond routine membership dues</li> <li>• Views membership as strategic</li> </ul> | CSR Promotion System<br><b>CSR Activity Report (Detailed) 2018</b> (P.7)<br>Local Communities, NGOs/NPOs, Governments<br><b>CSR Activity Report (Detailed) 2018</b> (P.8) |

## Identified Material Aspects and Boundaries

| Section | Indicator  | Link   |
|---------|--|--|
| G4-17   | a. List all entities included in the organization's consolidated financial statements or equivalent documents.<br>b. Report whether any entity included in the organization's consolidated financial statements or equivalent documents is not covered by the report.  | <b>AGC Report 2018</b> (P.5-6)<br><b>Financial Review</b>  |
| G4-18   | a. Explain the process for defining the report content and the Aspect Boundaries.<br>b. Explain how the organization has implemented the Reporting Principles for Defining Report Content.   | <b>AGC Report 2018</b> (P.38)<br>CSR Promotion System<br><b>CSR Activity Report (Detailed) 2018</b> (P.7)<br>Stakeholders<br><b>CSR Activity Report (Detailed) 2018</b> (P.8-9)  |
| G4-19   | List all the material Aspects identified in the process for defining report content.   | CSR Promotion System<br><b>CSR Activity Report (Detailed) 2018</b> (P.7)   |
| G4-20   | For each material Aspect, report the Aspect Boundary within the organization, as follows: <ul style="list-style-type: none"> <li>• Report whether the Aspect is material within the organization</li> <li>• If the Aspect is not material for all entities within the organization (as described in G4-17), select one of the following two approaches and report either: <ul style="list-style-type: none"> <li>– The list of entities or groups of entities included in G4-17 for which the Aspect is not material or</li> <li>– The list of entities or groups of entities included in G4-17 for which the Aspects is material</li> </ul> </li> <li>• Report any specific limitation regarding the Aspect Boundary within the organization</li> </ul> | Organizational Governance: Material Issues<br><b>CSR Activity Report (Detailed) 2018</b> (P.14-15)<br>Human Rights and Labor Practices: Material Issues<br><b>CSR Activity Report (Detailed) 2018</b> (P.21-22)<br>The Environment: Material Issues<br><b>CSR Activity Report (Detailed) 2018</b> (P.64-65)<br>Fair Operating Practices: Material Issues<br><b>CSR Activity Report (Detailed) 2018</b> (P.40-41)<br>Consumer Issues: Material Issues<br><b>CSR Activity Report (Detailed) 2018</b> (P.48-49) |

|       |   |  |
|-------|---|--|
| G4-21 | For each material Aspect, report the Aspect Boundary outside the organization, as follows:<br>Report whether the Aspect is material outside of the organization<br>If the Aspect is material outside of the organization, identify the entities, groups of entities or elements for which the Aspect is material. In addition, describe the geographical location where the Aspect is material for the entities identified<br>Report any specific limitation regarding the Aspect Boundary outside the organization | Material Issues: Social Responsibility in the Supply Chain<br><b>CSR Activity Report (Detailed) 2018</b> (P.51-52) |
| G4-22 | Report the effect of any restatements of information provided in previous reports, and the reasons for such restatements.   | Not applicable   |
| G4-23 | Report significant changes from previous reporting periods in the Scope and Aspect Boundaries.  | Not applicable   |

## Stakeholder Engagement

| Section | Indicator   | Link  |
|---------|---|---|
| G4-24   | Provide a list of stakeholder groups engaged by the organization.   | <b>Corporate Governance Report</b> (P.13)<br>CSR Promotion System<br><b>CSR Activity Report (Detailed) 2018</b> (P.7)<br>Stakeholders<br><b>CSR Activity Report (Detailed) 2018</b> (P.8-9) |
| G4-25   | Report the basis for identification and selection of stakeholders with whom to engage.  | <b>Corporate Governance Report</b> (P.13)<br>CSR Promotion System<br><b>CSR Activity Report (Detailed) 2018</b> (P.7)<br>Stakeholders<br><b>CSR Activity Report (Detailed) 2018</b> (P.8-9) |
| G4-26   | Report the organization's approach to stakeholder engagement, including frequency of engagement by type and by stakeholder group, and an indication of whether any of the engagement was undertaken specifically as part of the report preparation process.                   | <b>Corporate Governance Report</b> (P.13)<br>CSR Promotion System<br><b>CSR Activity Report (Detailed) 2018</b> (P.7)<br>Stakeholders<br><b>CSR Activity Report (Detailed) 2018</b> (P.8-9) |
| G4-27   | Report key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting. Report the stakeholder groups that raised each of the key topics and concerns. | <b>Corporate Governance Report</b> (P.13)<br>CSR Promotion System<br><b>CSR Activity Report (Detailed) 2018</b> (P.7)<br>Stakeholders<br><b>CSR Activity Report (Detailed) 2018</b> (P.8-9) |

## Report Profile

| Section | Indicator  | Link  |
|---------|--|---|
| G4-28   | Reporting period (such as fiscal or calendar year) for information provided.   | <b>AGC Report 2018</b> (P.38)                                       |
| G4-29   | Date of most recent previous report (if any).  | <b>AGC Report 2018</b> (P.38)<br><b>List of CSR Topics</b>          |
| G4-30   | Reporting cycle (such as annual, biennial).  | <b>AGC Report 2018</b> (P.38)<br><b>List of CSR Topics</b>          |
| G4-31   | Provide the contact point for questions regarding the report or its contents.  | <b>AGC Report 2018</b> (Back cover)<br><b>CSR-related inquiries</b> |
| G4-32   | a. Report the 'in accordance' option the organization has chosen.<br>b. Report the GRI Content Index for the chosen option (see tables below).<br>c. Report the reference to the External Assurance Report, if the report has been externally assured. GRI recommends the use of external assurance but it is not a requirement to be 'in accordance' with the Guidelines. | a. Core<br>b. This table<br>c. <b>Financial Review</b> (P.63)       |

## Assurance

| Section | Indicator   | Link                           |
|---------|---|--------------------------------|
| G4-33   | a. Report the organization's policy and current practice with regard to seeking external assurance for the report.<br>b. If not included in the assurance report accompanying the sustainability report, report the scope and basis of any external assurance provided.<br>c. Report the relationship between the organization and the assurance providers.<br>d. Report whether the highest governance body or senior executives are involved in seeking assurance for the organization's sustainability report. | <b>Financial Review</b> (P.63) |

## Governance: Governance Structure and Composition

| Section | Indicator  | Link  |
|---------|--|---|
| G4-34   | Report the governance structure of the organization, including committees of the highest governance body. Identify any committees responsible for decision-making on economic, environmental and social impacts. | <b>AGC Report 2018</b> (P.35-37)<br>Corporate Governance<br><b>CSR Activity Report (Detailed) 2018</b> (P.17)<br>CSR Promotion System<br><b>CSR Activity Report (Detailed) 2018</b> (P.7) |

## Ethics and Integrity

| Section | Indicator   | Link   |
|---------|---|--|
| G4-56   | Describe the organization's values, principles, standards and norms of behavior such as codes of conduct and codes of ethics. | <b>AGC Report 2018</b> (P.1-2)<br>CSR-Related Policies<br><b>CSR Activity Report (Detailed) 2018</b> (P.5)<br>Compliance<br><b>CSR Activity Report (Detailed) 2018</b> (P.21-22) |

## Specific Standard Disclosures

Only items that were selected as material issues for AGC Group have been included.

## Economic

| Aspect                      | Section | Indicator  | Link   |
|-----------------------------|---------|--|--|
| <b>Economic Performance</b> | G4-EC1  | Direct economic value generated and distributed  | <b>Financial Review</b>  |
|                             | G4-EC2  | Financial implications and other risks and opportunities for the organization's activities due to climate change | <b>Financial Review</b> (P.9-10)<br>Environmental Impact<br><b>CSR Activity Report (Detailed) 2018</b> (P.68)<br>Material Issues: Response to Climate Change<br><b>CSR Activity Report (Detailed) 2018</b> (P.65)<br>Response to Climate Change<br><b>CSR Activity Report (Detailed) 2018</b> (P.71-72)<br><b>Products and Technologies that Contribute to Environmental Solutions</b> |
|                             | G4-EC3  | Coverage of the organization's defined benefit plan obligations  | <b>Financial Review</b> (P.39-41)  |
|                             | G4-EC4  | Financial assistance received from government  |  |

## Environmental

| Aspect              | Section | Indicator   | Link   |
|---------------------|---------|---|--|
| Materials           | G4-EN1  | Materials used by weight or volume  | Environmental Impact/Environmental Accounting<br><b>CSR Activity Report (Detailed) 2018</b> (P.68-70)  |
|                     | G4-EN2  | Percentage of materials used that are recycled input materials  | Sustainable Use of Resources<br><b>CSR Activity Report (Detailed) 2018</b> (P.81-82)   |
| Energy              | G4-EN3  | Energy consumption within the organization  | Environmental Impact/Environmental Accounting<br><b>CSR Activity Report (Detailed) 2018</b> (P.68-70)<br>Response to Climate Change<br><b>CSR Activity Report (Detailed) 2018</b> (P.71-72)                          |
|                     | G4-EN4  | Energy consumption outside of the organization  | Response to Climate Change<br><b>CSR Activity Report (Detailed) 2018</b> (P.71-72)   |
|                     | G4-EN5  | Energy intensity  | Environmental Impact/Environmental Accounting<br><b>CSR Activity Report (Detailed) 2018</b> (P.68-70)<br>Response to Climate Change<br><b>CSR Activity Report (Detailed) 2018</b> (P.71-72)                          |
|                     | G4-EN6  | Reduction of energy consumption   | Response to Climate Change<br><b>CSR Activity Report (Detailed) 2018</b> (P.71-72)   |
|                     | G4-EN7  | Reductions in energy requirements of products and services  | Environmental Impact/Environmental Accounting<br><b>CSR Activity Report (Detailed) 2018</b> (P.68-70)  |
| Water               | G4-EN8  | Total water withdrawal by source  | Effective Use of Water Resources and the Prevention of Water Pollution<br><b>CSR Activity Report (Detailed) 2018</b> (P.76-77)   |
|                     | G4-EN9  | Water sources significantly affected by withdrawal of water   | Effective Use of Water Resources and the Prevention of Water Pollution<br><b>CSR Activity Report (Detailed) 2018</b> (P.76-77)   |
|                     | G4-EN10 | Percentage and total volume of water recycled and reused  |  |
| Emissions           | G4-EN15 | Direct greenhouse gas (GHG) emissions (Scope 1)   | Response to Climate Change<br><b>CSR Activity Report (Detailed) 2018</b> (P.71-72)   |
|                     | G4-EN16 | Energy indirect greenhouse gas (GHG) emissions (Scope 2)  | Response to Climate Change<br><b>CSR Activity Report (Detailed) 2018</b> (P.71-72)   |
|                     | G4-EN17 | Other indirect greenhouse gas (GHG) emissions (Scope 3)   | Response to Climate Change<br><b>CSR Activity Report (Detailed) 2018</b> (P.71-72)   |
|                     | G4-EN18 | Greenhouse gas (GHG) emissions intensity  | Environmental Impact/Environmental Accounting<br><b>CSR Activity Report (Detailed) 2018</b> (P.68-70)<br>Response to Climate Change<br><b>CSR Activity Report (Detailed) 2018</b> (P.71-72)                          |
|                     | G4-EN19 | Reduction of greenhouse gas (GHG) emissions   | Response to Climate Change<br><b>CSR Activity Report (Detailed) 2018</b> (P.71-72)   |
|                     | G4-EN20 | Emissions of ozone-depleting substances (ODS)   |  |
|                     | G4-EN21 | NOx, SOx, and Other Significant Air Emissions   | Pollution Prevention<br><b>CSR Activity Report (Detailed) 2018</b> (P.76, P.80-81)<br><b>Site Reports</b>  |
| Effluents and Waste | G4-EN22 | Total water discharge by quality and destination  | Effective Use of Water Resources and the Prevention of Water Pollution<br><b>CSR Activity Report (Detailed) 2018</b> (P.76-77)<br><b>Site Reports</b>  |
|                     | G4-EN23 | Total weight of waste by type and disposal method   | Environmental Impact/Environmental Accounting<br><b>CSR Activity Report (Detailed) 2018</b> (P.68-70)<br>Sustainable Use of Resources<br><b>CSR Activity Report (Detailed) 2018</b> (P.81-82)<br><b>Site Reports</b> |
|                     | G4-EN24 | Total number and volume of significant spills   |  |
|                     | G4-EN25 | Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention <sup>2</sup> Annex I, II, III, and VIII, and percentage of transported waste shipped internationally |  |

|  |         |   |   |
|--|---------|---|---|
| <b>Effluents and Waste</b>               | G4-EN26 | Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the organization's discharges of water and runoff |   |
| <b>Products and Services</b>             | G4-EN27 | Extent of impact mitigation of environmental impacts of products and services   | Environmental Impact/Environmental Accounting<br><b>CSR Activity Report (Detailed) 2018</b> (P.68-70)   |
|  | G4-EN28 | Percentage of products sold and their packaging materials that are reclaimed by category  |   |
| <b>Compliance</b>                        | G4-EN29 | Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations                                 | <b>Press Releas</b>   |
| <b>Transport</b>                         | G4-EN30 | Significant environmental impacts of transporting products and other goods and materials for the organization's operations, and transporting members of the workforce     | Response to Climate Change<br><b>CSR Activity Report (Detailed) 2018</b> (P.71-72)  |
| <b>Overall</b>                           | G4-EN31 | Total environmental protection expenditures and investments by type   | Environmental Impact/Environmental Accounting<br><b>CSR Activity Report (Detailed) 2018</b> (P.68-70)<br>Annual Report (Japanese only) (P.171)  |
| <b>Supplier Environmental Assessment</b> | G4-EN32 | Percentage of new suppliers that were screened using environmental criteria   |   |
|  | G4-EN33 | Significant actual and potential negative environmental impacts in the supply chain and actions taken   | Material Issues: Social Responsibility in the Supply Chain<br><b>CSR Activity Report (Detailed) 2018</b> (P.47)<br>Supply Chain<br><b>CSR Activity Report (Detailed) 2018</b> (P.51-52) |

## Social: Labor Practices and Decent Work

| Aspect   | Section | Indicator  | Link  |
|--|---------|--|---|
| <b>Occupational Health and Safety</b>          | G4-LA5  | Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs |   |
|  | G4-LA6  | Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region and by gender                      | Occupational Health & Safety<br><b>CSR Activity Report (Detailed) 2018</b> (P.37-40)<br><b>Site Reports</b>   |
|  | G4-LA7  | Workers with high incidence or high risk of diseases related to their occupation   | Occupational Health & Safety<br><b>CSR Activity Report (Detailed) 2018</b> (P.37-40)<br><b>Site Reports</b>   |
|  | G4-LA8  | Health and safety topics covered in formal agreements with trade unions  |   |
| <b>Training and Education</b>                  | G4-LA9  | Average hours of training per year per employee by gender, and by employee category  | Employee Education<br><b>CSR Activity Report (Detailed) 2018</b> (P.34-36)  |
|  | G4-LA10 | Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings                            | Material Issues: Human Resource Development<br><b>CSR Activity Report (Detailed) 2018</b> (P.24)<br>Employee Education<br><b>CSR Activity Report (Detailed) 2018</b> (P.34-36)<br>Global Promotion of Diversity<br><b>CSR Activity Report (Detailed) 2018</b> (P.32-34) |
|  | G4-LA11 | Percentage of employees receiving regular performance and career development reviews, by gender and by employee category   | Human Resources Management<br><b>CSR Activity Report (Detailed) 2018</b> (P.25-26)<br>Employee Education<br><b>CSR Activity Report (Detailed) 2018</b> (P.34-36)  |
| <b>Supplier Assessment for Labor Practices</b> | G4-LA14 | Percentage of new suppliers that were screened using labor practices criteria  |   |
|  | G4-LA15 | Significant actual and potential negative impacts for labor practices in the supply chain and actions taken  | Material Issues: Social Responsibility in the Supply Chain<br><b>CSR Activity Report (Detailed) 2018</b> (P.47)<br>Supply Chain<br><b>CSR Activity Report (Detailed) 2018</b> (P.51-52)   |

## Social: Human Rights

| Aspect                                  | Section | Indicator  | Link  |
|---|---------|--|---|
| <b>Child Labor</b>                      | G4-HR5  | Operations and suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor                              | Material Issues: Fair Working Conditions<br><b>CSR Activity Report (Detailed) 2018</b> (P.24)<br>Respect for Human Rights<br><b>CSR Activity Report (Detailed) 2018</b> (P.27-28)       |
| <b>Forced or Compulsory Labor</b>       | G4-HR6  | Operations and suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor | Material Issues: Fair Working Conditions<br><b>CSR Activity Report (Detailed) 2018</b> (P.24)<br>Respect for Human Rights<br><b>CSR Activity Report (Detailed) 2018</b> (P.27-28)       |
| <b>Supplier Human Rights Assessment</b> | G4-HR10 | Percentage of new suppliers that were screened using human rights criteria   |   |
|   | G4-HR11 | Significant actual and potential negative human rights impacts in the supply chain and actions taken   | Material Issues: Social Responsibility in the Supply Chain<br><b>CSR Activity Report (Detailed) 2018</b> (P.47)<br>Supply Chain<br><b>CSR Activity Report (Detailed) 2018</b> (P.51-52) |

## Social: Society

| Aspect  | Section | Indicator   | Link  |
|---|---------|---|---|
| <b>Anti-corruption</b>                            | G4-SO3  | Total number and percentage of operations assessed for risks related to corruption and the significant risks identified     | Material Issues: Anti-corruption<br><b>CSR Activity Report (Detailed) 2018</b> (P.47)<br>Compliance<br><b>CSR Activity Report (Detailed) 2018</b> (P.21-22, P.48-49)<br>Fair Transactions<br><b>CSR Activity Report (Detailed) 2018</b> (P.48-49) |
|   | G4-SO4  | Communication and training on anti-corruption policies and procedures   | Material Issues: Anti-corruption<br><b>CSR Activity Report (Detailed) 2018</b> (P.16, P.47)<br>Compliance<br><b>CSR Activity Report (Detailed) 2018</b> (P.21-22)<br>Fair Transactions<br><b>CSR Activity Report (Detailed) 2018</b> (P.48-49)    |
|   | G4-SO5  | Confirmed incidents of corruption and actions taken   |   |
| <b>Anti-competitive Behavior</b>                  | G4-SO7  | Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes          | <b>Press Release</b><br>Fair Transactions<br><b>CSR Activity Report (Detailed) 2018</b> (P.48-49)   |
| <b>Compliance</b>                                 | G4-SO8  | Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations | <b>Press Release</b><br>Compliance<br><b>CSR Activity Report (Detailed) 2018</b> (P.21-22)  |
| <b>Supplier Assessment for Impacts on Society</b> | G4-SO9  | Percentage of new suppliers that were screened using criteria for impacts on society  |   |
|   | G4-SO10 | Significant actual and potential negative impacts on society in the supply chain and actions taken                          | Material Issues: Social Responsibility in the Supply Chain<br><b>CSR Activity Report (Detailed) 2018</b> (P.47)<br>Supply Chain<br><b>CSR Activity Report (Detailed) 2018</b> (P.51-52)   |

## Social: Product Responsibility

| Aspect                              | Section | Indicator  | Link   |
|-------------------------------------|---------|--|--|
| <b>Customer Health and Safety</b>   | G4-PR1  | Percentage of significant product and service categories for which health and safety impacts are assessed for improvement  | Quality Assurance<br><b>CSR Activity Report (Detailed) 2018</b> (P.60-62)  |
|                                     | G4-PR2  | Total number of incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of products and services during their life cycle, by type of outcomes  | Quality Assurance<br><b>CSR Activity Report (Detailed) 2018</b> (P.60-62)  |
| <b>Product and Service Labeling</b> | G4-PR3  | Type of product and service information required by the organization's procedures<br>For product and service information and labeling, and percentage of significant product and service categories subject to such information requirements | Chemical Substances Management<br><b>CSR Activity Report (Detailed) 2018</b> (P.78)  |
|                                     | G4-PR4  | Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes  | Chemical Substances Management<br><b>CSR Activity Report (Detailed) 2018</b> (P.78)  |
|                                     | G4-PR5  | Results of surveys measuring customer satisfaction   | Customer Satisfaction<br><b>CSR Activity Report (Detailed) 2018</b> (P.63)<br>Supply Chain<br><b>CSR Activity Report (Detailed) 2018</b> (P.51-52) |
| <b>Compliance</b>                   | G4-PR9  | Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services   | <b>Press Release</b><br>Quality Assurance<br><b>CSR Activity Report (Detailed) 2018</b> (P.60-62)  |



### [CSR Monitoring “Items for Which a Framework is to be Developed and a Commitment Made to Society (Material Issues)”] and [GRI Guidelines, 4th edition (G4)] Comparison Chart

| CSR Monitoring “Items for Which a Framework is to be Developed and a Commitment Made to Society (Material Issues)” |   | GRI 4.0 (Specific Standard Disclosures) |                      |                 |                           |                       |           |        |       |              |           |
|--|---|---|----------------------|-----------------|---------------------------|-----------------------|-----------|--------|-------|--------------|-----------|
| ISO 26000 core subjects / issues   | ISO 26000 related actions and expectations  | Category                                | Economic             |                 |                           |                       |           |        |       |              |           |
|  |   | Aspects                                 | Economic Performance | Market Presence | Indirect Economic Impacts | Procurement Practices | Materials | Energy | Water | Biodiversity | Emissions |
| <b>Organizational Governance</b>   |   |   |                      |                 |                           |                       |           |        |       |              |           |
| Decision-making processes and structures   | 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   |   |                      |                 |                           |                       |           |        |       |              |           |
| <b>Human Rights and Labor Practices</b>  |   |   |                      |                 |                           |                       |           |        |       |              |           |
| Conditions of work and social protection   | 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  | 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  | 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  |   |                      |                 |                           |                       |           |        |       |              |           |
| <b>The Environment</b>   |   |   |                      |                 |                           |                       |           |        |       |              |           |
| Prevention of pollution  | 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   | 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   | 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 energy efficient goods and development of energy efficient products   |   |                      |                 |                           |                       |           |        | ●     |              | ●         |
| <b>Fair Operating Practices</b>  |   |   |                      |                 |                           |                       |           |        |       |              |           |
| Anti-corruption  | 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   | 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   | 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   |   |                      |                 |                           |                       |           |        |       |              |           |
| <b>Consumer Issues</b>   |   |   |                      |                 |                           |                       |           |        |       |              |           |
| Protecting consumers’ health and safety  | 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   |   |                      |                 |                           |                       |           |        |       |              |           |

