



**AGC Inc.**

ESG Online Briefing Session

September 5, 2022

## Event Summary

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|-----------------------------|--|
| <b>[Company Name]</b>       | AGC Inc.   |
| <b>[Company ID]</b>         | 5201-QCODE   |
| <b>[Event Language]</b>     | JPN  |
| <b>[Event Type]</b>         | Investor Conference  |
| <b>[Event Name]</b>         | ESG Online Briefing Session  |
| <b>[Date]</b>               | September 5, 2022  |
| <b>[Number of Pages]</b>    | 47   |
| <b>[Time]</b>               | 17:00 – 17:52<br>(Total: 52 minutes, Presentation: 27 minutes, Q&A: 25 minutes)  |
| <b>[Venue]</b>              | Webcast  |
| <b>[Number of Speakers]</b> | 3  |
|                             | Shinji Miyaji                      Representative Director, Senior Executive<br>Vice President, CFO                                |
|                             | Tadashi Murano                    GM of Strategy & Planning Div., GM of<br>Sustainability Div., Corporate Planning<br>General Div. |
|                             | Chikako Ogawa                    General Manager of Corporate<br>Communications & Investor Relations<br>Division                   |

## Presentation

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**Operator:** For this online briefing, simultaneous interpretation in English will be provided. If you wish to listen in English, please press the interpretation button and select English.

We will soon start our debriefing session. And this is housekeeping announcement. Please only use the one terminal, one person. And please download the presentation material from our homepage. We do have the simultaneous translation services. If you're listening to English, then you are already receiving the English translation service. Thank you.

If you have any questions, please contact us. 03-3218-5603 is the phone number. Please wait for a while. Thank you.

**Ogawa:** We will now begin AGC Inc.'s 2022 ESG briefing session.

My name is Ogawa from the public relations and investor relations department, and I will be your moderator today. Let me introduce to you today's attendees: Representative Director, Senior Executive Vice President, CFO, Mr. Shinji Miyaji; and General Manager of Strategy and Planning Division, General Manager of Sustainability Division, Corporate Planning General Division, Mr. Tadashi Murano.

First, the CFO, Mr. Miyaji, will explain AGC's sustainability management. After that, Mr. Murano will explain AGC's response to climate change issues. After the presentation, we will have a question-and-answer session. If you have any questions, please press the Q&A button.

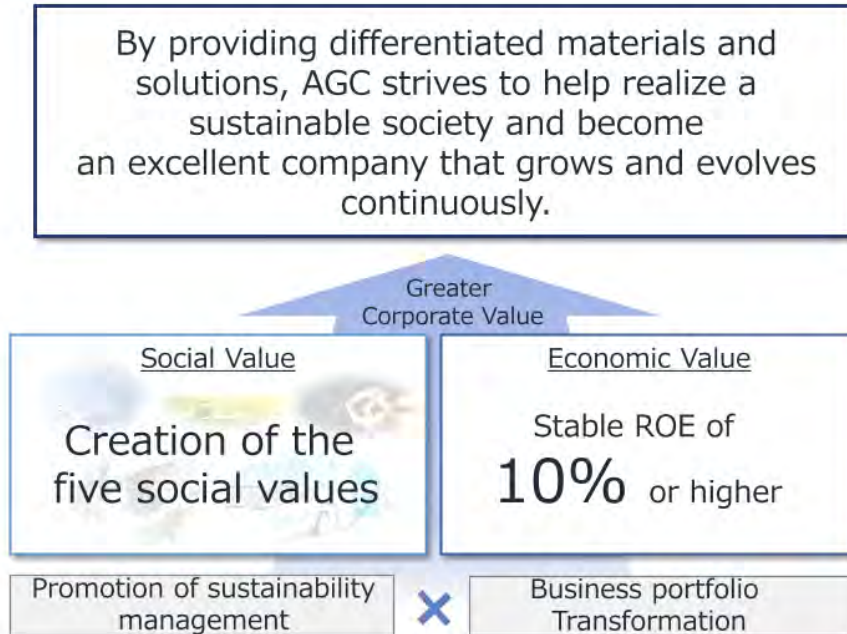
This session is scheduled to end at 6:15 PM JST. We appreciate your cooperation. Now, Mr. Miyaji, please start your presentation.

**Miyaji:** Thank you very much for the introduction. I'll spend about five minutes at the outset just for a brief explanation.



If you can jump to page five. This shows the Group vision, Look Beyond, and it was formulated in 2002. It has been slightly changed. But as for our shared values for the past 20 years, there has been no change. And the environment has been incorporated as one of the important shared values. And response to environment protection has been done in a serious manner.

- We will grow through well-balanced creation of social and economic value.



Next page, please. So last year, we have come up with Vision 2030. We would like to realize both social values and economic values.

# Social Value to be created by AGC

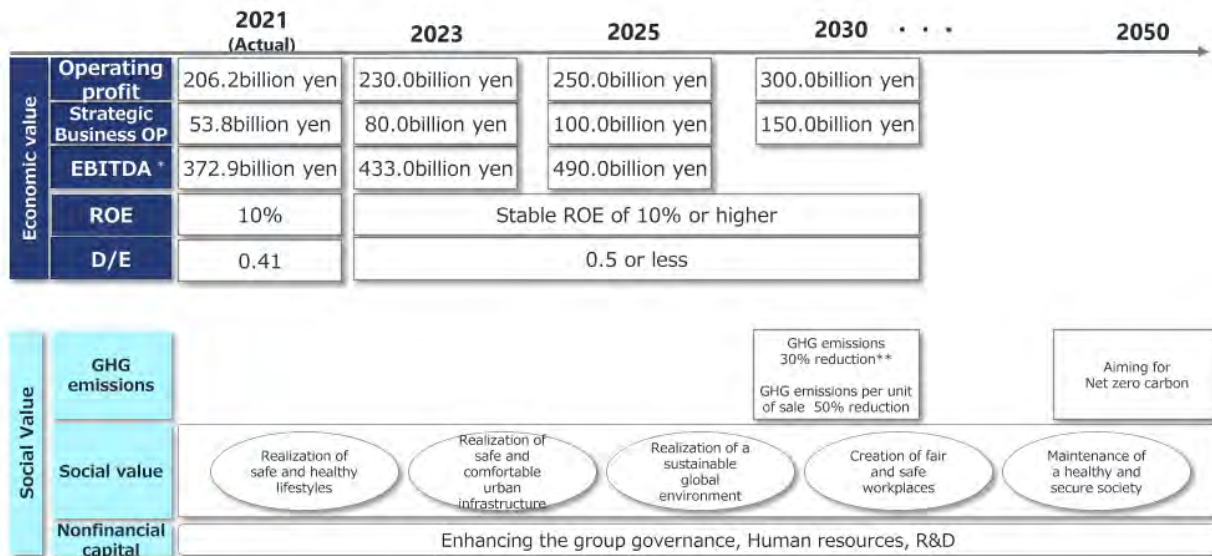
- We will create the following five social values through its business activities.

| Realization of safe and comfortable urban infrastructure   | Realization of safe and healthy lifestyles   | Maintenance of a healthy and secure society  | Creation of fair and safe workplaces  | Realization of a sustainable global environment   |
|--|--|--|---|---|
|  <p>Low-E glass for building</p>  |  <p>Pharmaceuticals (intermediate/active ingredients)</p> |  <p>Relationship with local communities</p> |  <p>Workplace safety</p>    |  <p>Response to climate change</p> |
|  <p>UV cut glass for vehicles</p> |  <p>Agrochemicals (intermediate/active ingredients)</p>   |  <p>Consideration for local environment</p> |  <p>Diversity</p>           |  <p>Effective use of resources</p> |
|  <p>Polyvinyl Chloride Resin</p>  |  <p>ETFE film for agricultural green-houses</p>           |  <p>Human rights in supply chains</p>       |  <p>Employee engagement</p> |   |

Next page, the social values. The five social values, which we would like to create are shown here. I don't have enough time to explain each one of them, but we would like to focus on the far right today. The climate change response is the focal point of our briefing today.

# Grow by creating both social value and economic value

- We will achieve through the portfolio transformation and the pursuit of sustainability management.

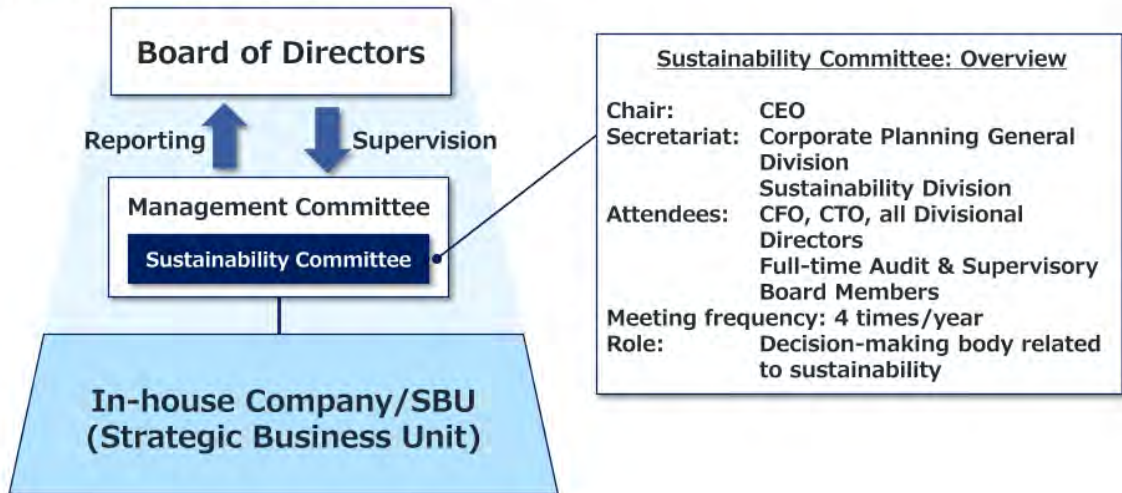


\* EBITDA=Operating profit +Depreciation \*\*Reduction targets in Scope 1+2 emissions and Scope 3 emissions (Categories 1, 10, 11, and 12)©AGC Inc.

Here, you can see the co-creation of social and economic values. And this is the image that we have. As for economic values, we have been making steady progress. And we would like to work on social values as well.

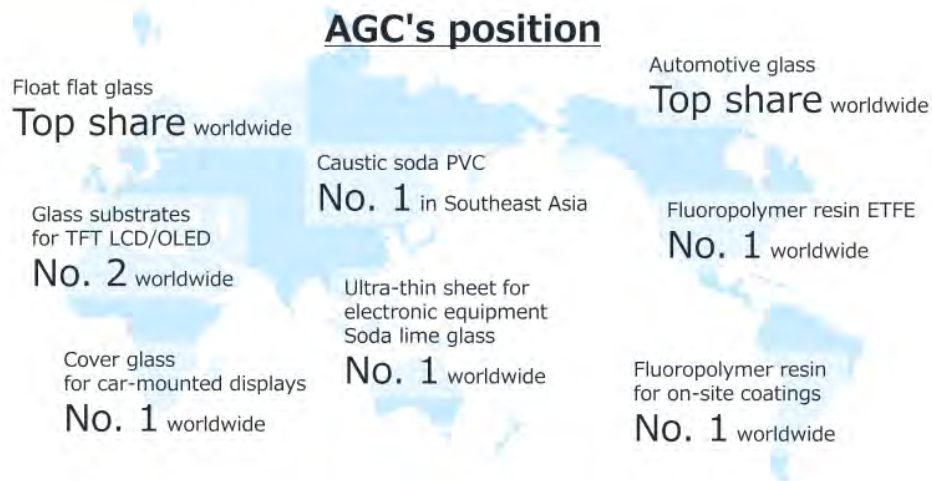
# AGC's Sustainability Management Governance Structure

- Under the supervision of the Board of Directors, the Sustainability Committee formulates group strategies, including responses to climate change issues and the formulation of non-financial indicators related to ESG, and manages progress.



Next page, please. As to sustainability, the structure of the governance is shown here. In AGC, the Sustainability Committee was established. And this is positioned at the same level as the Management Committee. And this is the highest decision-making body for the executive organization. And it is reporting to the Board of Directors on a regular basis on all kinds of strategies and progress management, and ESG is being done. And PDCA is used to run the cycle. And of course, the CEO is the chair of this committee.





**We will achieve our responsibility as an industry leader by minimizing CO2 emissions from production to transportation and providing environmentally friendly products.**

\*AGC estimates as of January 2022

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This is my last slide. In AGC, as you know, we have been engaged in various industries. And we have been commanding leadership positions in the markets as an industrial leader. We'd like to fulfill our responsibility. Especially in terms of environmental issues, we need to fulfill our responsibility as a leader. And from manufacturing to sales, emissions of CO2 has to be minimized. And at the same time, we have to offer more products to contribute to environmental protection so that we can fulfill our role and responsibility as an industry leader. So, we're going to focus on climate change response today. And I'd like to let Mr. Murano explain the rest of the presentation. So. Mr. Murano, over to you.

## 2. Initiatives to Address Climate Change

- Progress to date and structure
- Business portfolio transformation
- Addressing Climate Change

**Murano:** I am from the sustainability division, and my name is Murano. And I'd like to talk about the sustainability management of AGC and one of the important points, climate change initiatives. And I'd like to spend about 20 minutes. In the slides, there are expressions such as GHG and CO2, but they are basically saying the same thing.

## Milestones in Addressing Climate Change

- We have long been committed to environmental conservation through product development and other activities.
- In 2001, the AGC Group formulated the AGC Group Environmental Policy and accelerated group-wide efforts to create a sustainable society.

|      |  |
|------|--|
| 1971 | Establishes Environmental Department at AGC Headquarter<br>– Strengthened structure for environmental initiatives                        |
| 1992 | Asahi Glass Foundation establishes Blue Planet Prize<br>– Recognition for contributions to solving global environmental issues           |
| 1993 | Formulates the New AGC Vision 21<br>– A proactive approach to environmental preservation and resource conservation as part of our policy |
| 2001 | Formulates AGC Group Environmental Policy<br>– Clarifies contribution to the creation of a sustainable society                           |
| 2002 | Formulates AGC Group vision "Look Beyond"<br>– Environment is clearly defined in Our Shared Values, accelerating initiatives             |
| 2005 | Establishes CSR Committee – Strengthened governance related to sustainability management   |
| 2010 | Formulates AGC Group Social Contribution Basic Policy<br>– Clarifies proactive social contribution activities                            |
| 2014 | Establishes 6x CO2 reduction target for 2020<br>– Formulates reduction targets through energy-saving and energy-creating products        |
| 2015 | Formulates <i>AGC plus</i> management policy – Providing a plus in value to all stakeholders   |
| 2016 | Formulates long-term management strategy "Vision 2025"<br>– Sets out business portfolio transformation and sustainable management        |

And as a material manufacturer, we have been deploying global businesses. And we have been trying to contribute to the environment protection. And in 1971, we established the environmental department. And in 1992, Asahi Glass Foundation, a Blue Planet Award was established. And that will be explained in the next page.

## 30th Anniversary of Asahi Glass Foundation's Blue Planet Prize

- The Asahi Glass Foundation\* established the Blue Planet Prize in 1992, the year of the Earth Summit.
- Awarded to a cumulative total of 60 individuals/organizations\*\* that have made significant contributions to solving global environmental problems.
- Dr. Manabe, the 2021 Nobel laureate in physics, was awarded the 1st prize, and Professor Jeffrey D. Sachs, who helped to formulate the SDGs, was awarded the 24th prize.

1st Winner (1992)



Dr. Syukuro Manabe



24th Winner (2015)



Professor Jeffrey D. Sachs

\*A public interest incorporated foundation independent of AGC Inc. \*\*Results through 2021

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13

Last year's Nobel laureate, Dr. Manabe was awarded the Blue Planet Prize 30 years ago. And he was the first one to be awarded. And also, well-known Dr. Jeffrey D. Sachs, who was involved in SDG formulation, was also one of the awardees. So we have been continuing to award and recognize those who are involved in the environmental protection.

# Accelerating Initiatives to Address Climate Change

- The SDGs Division\* was established within the Corporate Planning General Division in 2018 to further accelerate efforts to address climate change issues.

## Initiatives to Address Climate Change

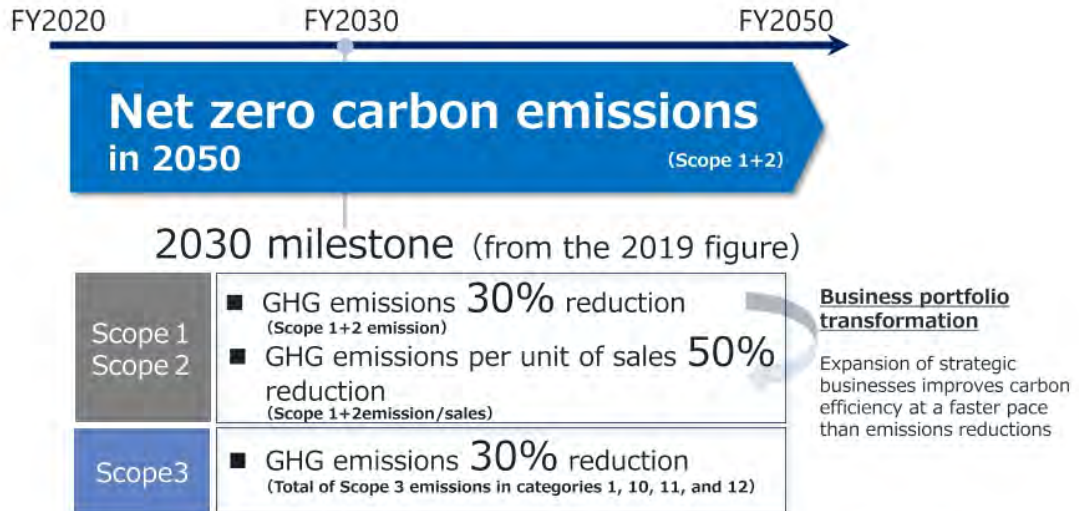


\*Current Sustainability Division

And as you can see here, as the AGC Group, in order to address climate change more aggressively, in 2018, SDGs division was established in corporate planning and general division to formulate long-term targets and initiatives for climate change on a group-wide basis.

# Net Zero Carbon Emissions Targets (2050) and Milestones

- In 2021, we formulated medium- to long-term GHG reduction targets.
- Applied for SBT certification by SBTi\*, an international climate change initiative



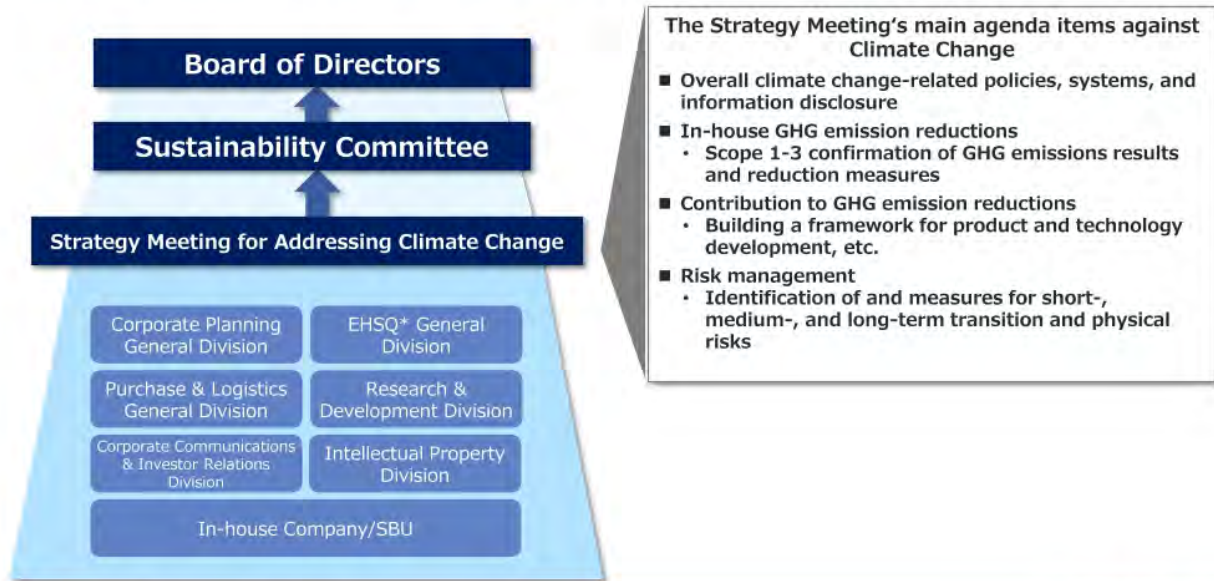
\*Science Based Targets initiative

And next page, the net zero carbon milestones. In last year, we have come up with a 2050 carbon net zero target. And ahead of that, in 2030, Scope 1 and Scope 2, GHG emissions, 30% reduction would be targeted. And at the same time, the GHG emissions per unit of sales has to be also reduced by 50%. And that is the target for 2030. And this fiscal year, as for Scope 3, we have come up with the GHG emissions 30% reduction target as well.

And later, I will explain more about this. But in each of the products and processes and the whole supply chain, energy saving and GHG reduction initiatives will be accelerated further. And as for the entire group, life science and electronics, which are growing, and strategic businesses will be expanded and so that we can improve carbon efficiency on a group-wide basis. And after 2030, there will be a challenging target, but we'd like to strive for achieving these targets.

# Strategy Meeting for Addressing Climate Change

- We hold Strategy Meeting to address climate change in the global and cross-divisional scale.
- We consider key policies, measures, etc. related to climate change issues.



\*Environment, Health & Safety, Quality

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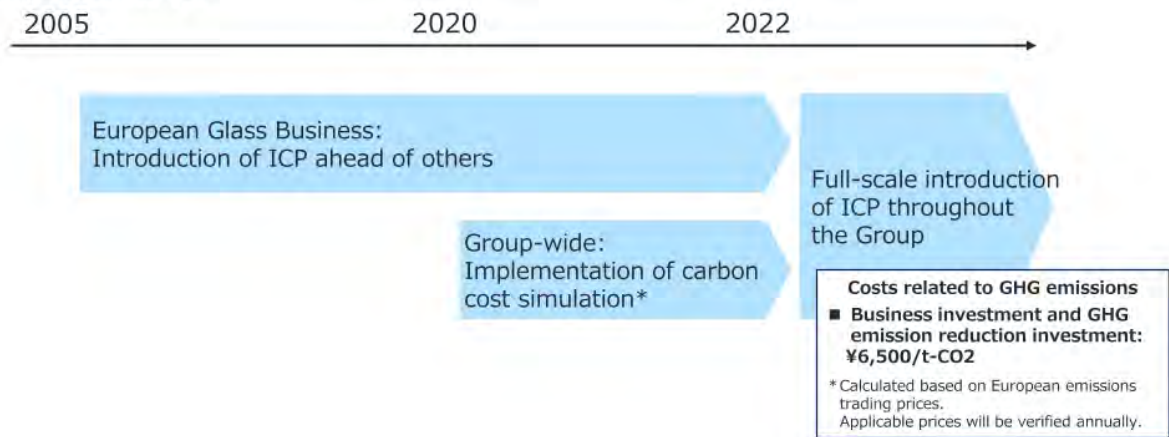
16

Next page, please. As was explained earlier, the Sustainability Committee is established, and the strategy meeting to address climate change was established within that committee to accelerate specific initiatives. And this is a cross-functional activity for the entire group. And as you can see, the GHG emission reduction, contribution, and initiatives are being discussed at this strategic meeting.

# Introduction of Internal Carbon Pricing

- Internal Carbon Pricing (ICP) was fully implemented in March 2022.
- Promoting reduction of GHG emissions (Scope 1+2)

Timeline of full-scale introduction of ICP



\*Calculation of NPV per GHG emissions for investment projects

And, at the same time, as you can see in this page, internal carbon pricing has been introduced through out the group. From this fiscal year, we have been applying this on a full-scale basis and internal investments and developments in the Company. We are accelerating to emission reduction within those investments.



## 2. Initiatives to Address Climate Change

- Activities to date and structure
- **Business portfolio transformation**
- Addressing Climate Change

Now, the specific initiatives to address climate change for the entire group.

## Direction of the Business Portfolio Transformation(1)

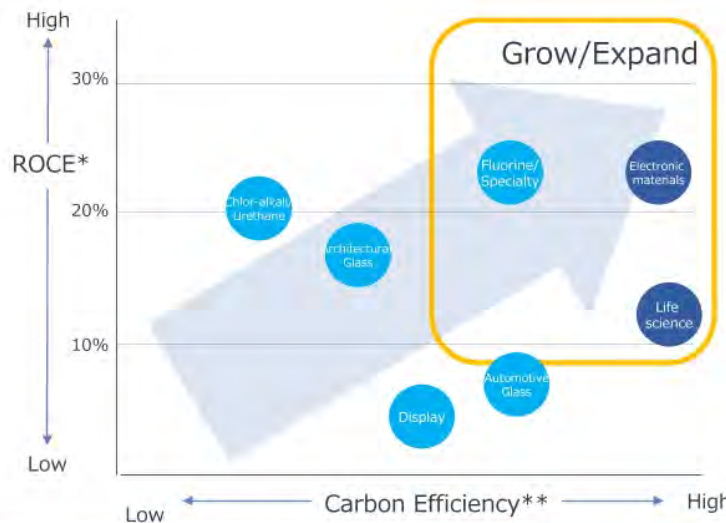
- Through the practice of ambidextrous management, we aim to build a business portfolio that is resilient to market fluctuations and has high asset efficiency, growth potential, and carbon efficiency.



The Group as a whole aims to build a business portfolio that is highly resilient to market fluctuations, has high asset efficiency, high growth rates, and high carbon efficiency, as shown here, by promoting core businesses of glass and chemicals, and strategic business of life science and electronics that I mentioned earlier, in the form of ambidextrous management.

- We will expand strategic businesses with high carbon and asset efficiency, while working to improve the carbon and asset efficiency of core businesses to both capture opportunities and reduce risk.

## Direction of the AGC Group’s business portfolio



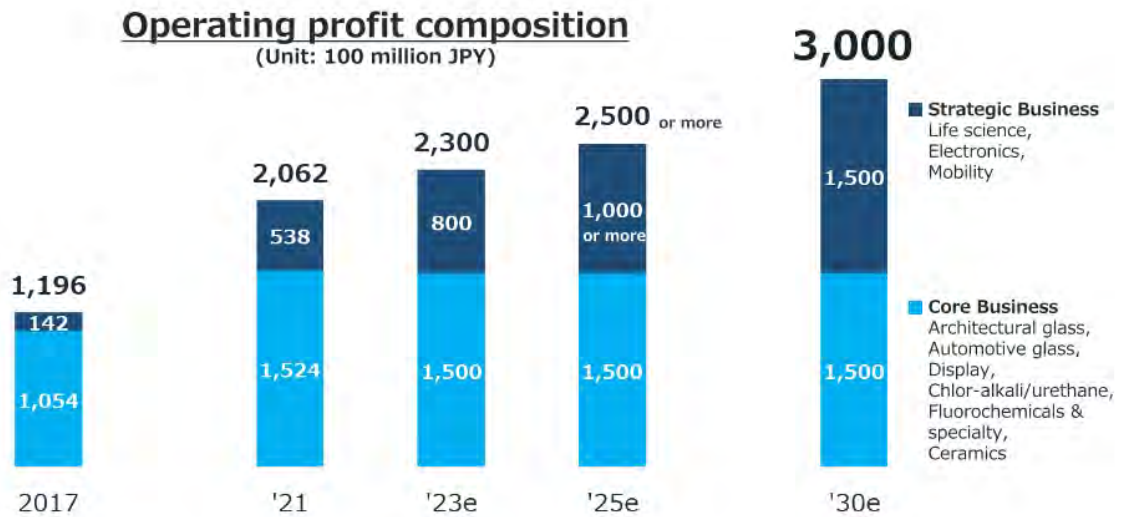
\*Created based on the 2023 Target \*\*Created Actual emissions per net sales in 2020 ● Core Business ● Strategic Business ©AGC Inc. 20

And as you can see, specifically in the graph on page 20, the horizontal axis is CO2 emission per unit of sales, and vertical asset is asset efficiency or ROCE. And every business has to strive for right top corner. But the dark blue, the electronic materials and life science or fluorine and specialty businesses, if we can expand those businesses, then group-wide carbon efficiency should be improved. And that is the strategy.

## Direction of the Business Portfolio Transformation(3)



- We are expanding strategic businesses and shifting to a more carbon-efficient business portfolio.



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This is operating profit base target. In 2030, entire group operating profit of JPY300 billion is the target. And of that, as I said, life science, electronics, those strategic businesses will have to represent at least 50%. And as a result, the entire group carbon efficiency should be improved.

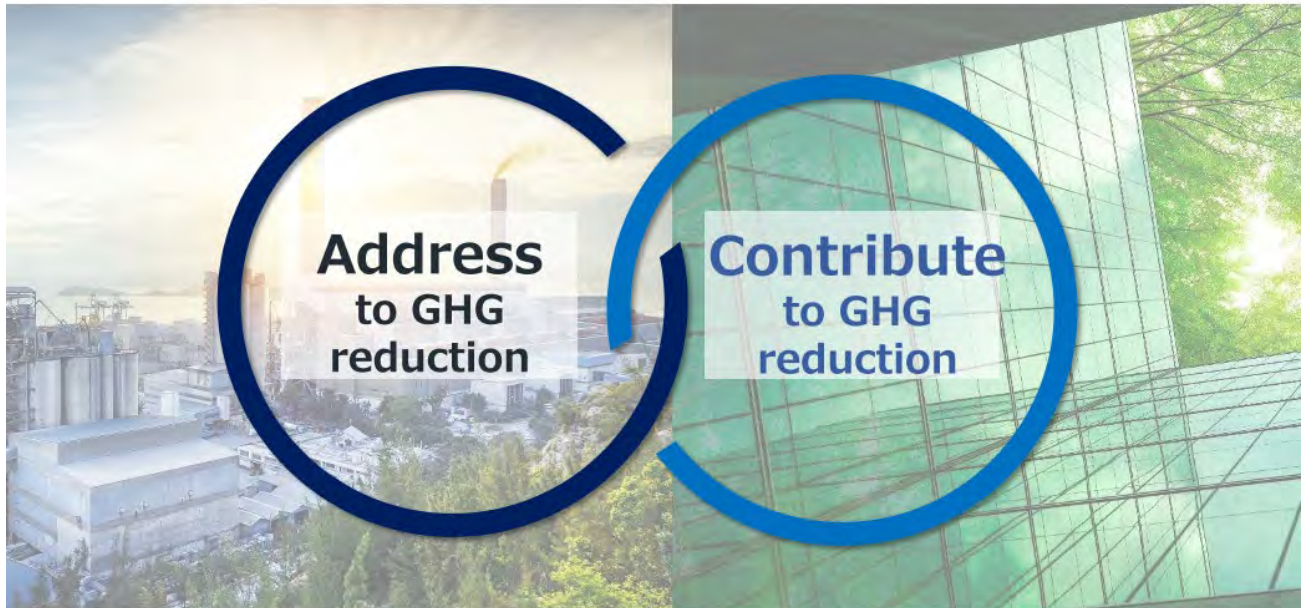
## 2. Initiatives to Address Climate Change

- Activities to date and structure
- Business portfolio transformation
- **Addressing Climate Change**

Now, to issues of climate change, what are the specific initiatives and technology roadmap?

## Addressing Climate Change

- We will promote initiatives that both address GHG reductions and contribute to GHG reductions.



I will now explain more specific initiatives, technology roadmaps, etc., to address the issue of climate change.

As the AGC Group is committed to promoting initiatives to address climate change issues from two perspectives: reducing GHG emissions from our own product processes. And at the same time, contributing to the reduction of GHG emissions in the world through the AGC Group's product and technologies.

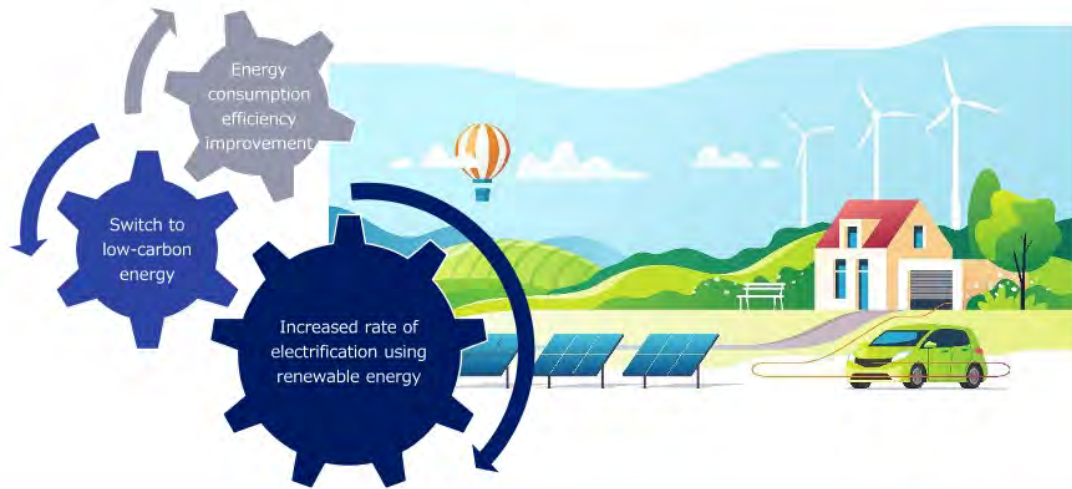
## 2. Initiatives to Address Climate Change

- Activities to date and structure
- Business portfolio transformation
- **Addressing Climate Change**
  - **Address to GHG reduction**
  - Contributions to GHG reduction

First, let me explain our approach to GHG reduction.

## Global Efforts to Address Climate Change

- For the reduction of CO2 emissions from energy use, countries are accelerating their efforts for energy consumption efficiency improvement and low-carbon energy consumption.
- Electrification using renewable energy, etc. is expected to advance, especially in the low-carbon energy sector.



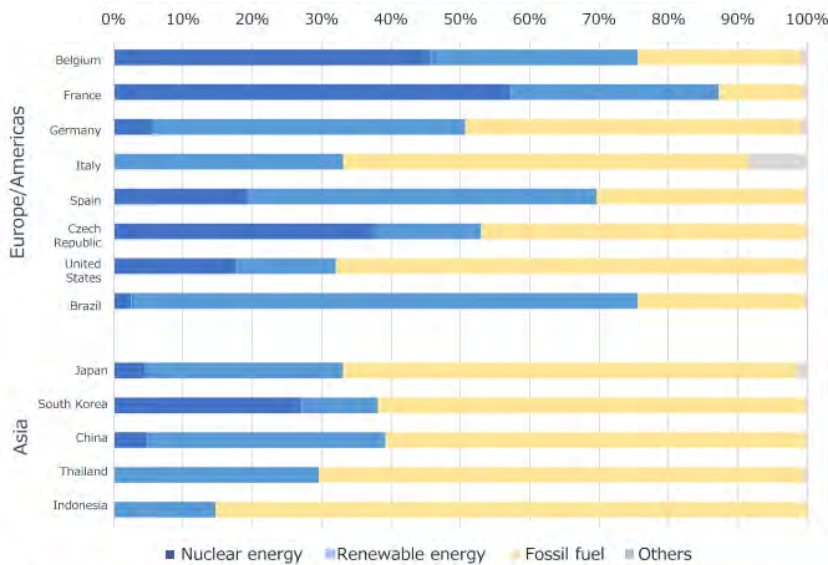
Here is a slide about the global climate change response. Each region and country is making progress in its low-carbon efforts.



# Reduce GHG Emissions by Taking into Account Regional Characteristics

- We will promote optimal GHG reduction measures in accordance with the trend toward decarbonization of electricity sources in each country.

Composition of electricity generated by source\*



Direction of GHG reduction by region toward 2030

GHG emission coefficient for electricity is low, **electrification** is actively promoted.

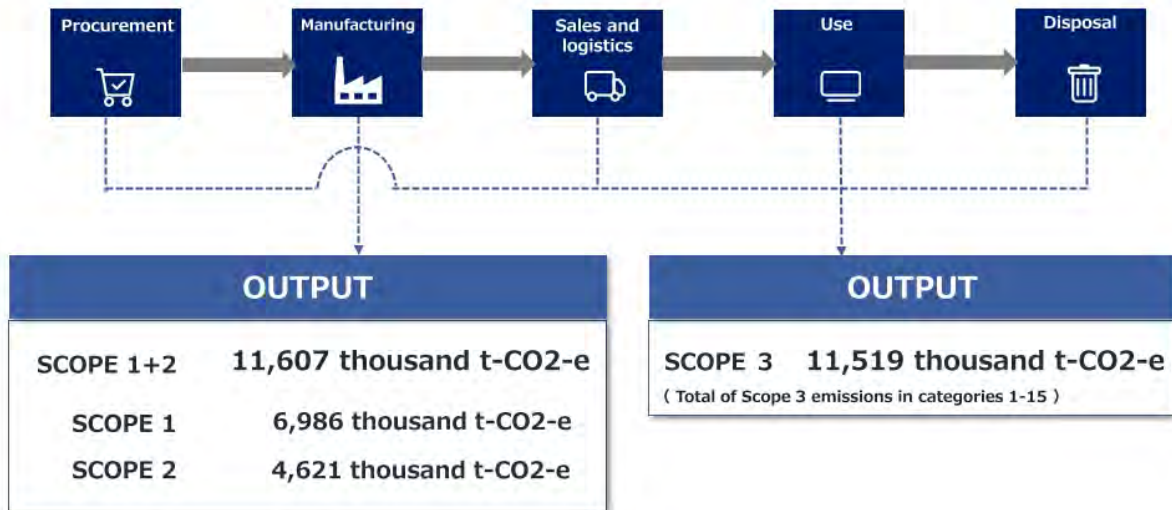
GHG emission coefficient for electricity is high, **energy conservation** measures are being accelerated

\*Compiled from IEA and ASEAN Power Updates 2021 data

As you can see on page 26, in each of the countries, the energy source or electricity source decarbonization efforts are varied. The AGC Group operates globally in approximately 30 countries. And basically, the manufacturing process of AGC products have to shift from fossil fuel to, for example, electricity, which has less GHG emissions. That's the basic strategy. But in different regions, the GHG emission coefficients are different. So in order to have effective results, we have to have optimum policy and strategy in each of the regions. For example, in US and Europe, as you can see, electricity GHG emission coefficient is low, so electrification will be promoted. But in Asia, this GHG emission coefficient is still high. So energy conservation will be given more priority. So that's the way that we are going to focus.

# GHG Emissions and Breakdown by Scope (2021)

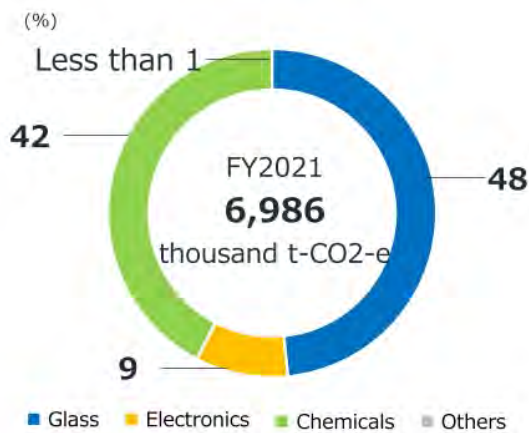
- GHG (CO<sub>2</sub>) emissions in 2021: 11,607kt in Scope 1 and 2, 11,519kt in Scope 3



So, this is the AGC Group's GHG emission. In year 2021, this is the actual. There's a Scope 1 and Scope 2 emission is about 11.607 million. And Scope 2 is almost the same. And Scope 3 is about 11,519 million. This is the breakdown of Scope 1 and Scope 2.

## Scope 1 Breakdown by Segment

- Float glass melting furnaces in the Glass and Electronics segments account for the majority of Scope 1 emissions.
- The main source of emissions in the Chemicals segment is on-site power generation facilities.



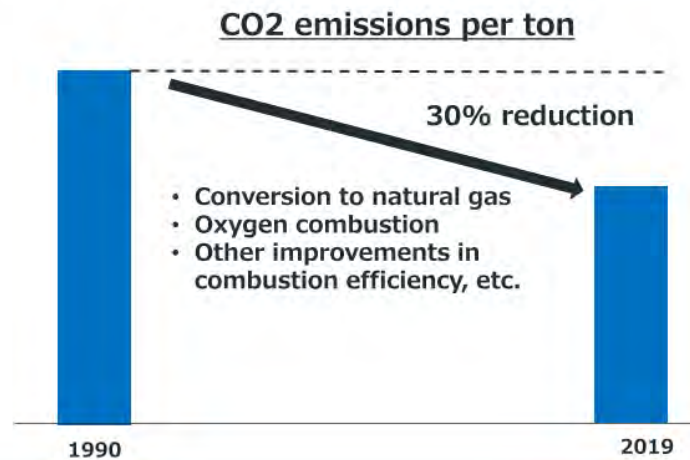
| Scope1               |  |
|----------------------|--|
| <b>Scope 1 total</b> | <b>6,986 thousand t-CO<sub>2</sub>-e</b> |
| ● Glass              | 3,379 thousand t-CO <sub>2</sub> -e      |
| ● Electronics        | 623 thousand t-CO <sub>2</sub> -e        |
| ● Chemicals          | 2,961 thousand t-CO <sub>2</sub> -e      |
| ● Others             | 24 thousand t-CO <sub>2</sub> -e         |

Briefly, here is the breakdown by Scope 1.

For scope 1, for the glass and electronics segment there's a float glass melting furnace. This is an emission producing that. And also the chemical segment, we have on-site power generation. These are main emissions in Scope 1.

## Past initiatives: Reducing CO2 Emissions in Float Glass Melting Furnaces

- In the Glass business, efforts have been made to reduce CO2 emissions in the melting process by improving combustion efficiency, etc.
- In Europe, there was a 30% reduction in CO2 emissions per ton of glass produced between 1990 and 2019 through fuel conversion to natural gas, oxygen combustion, etc.

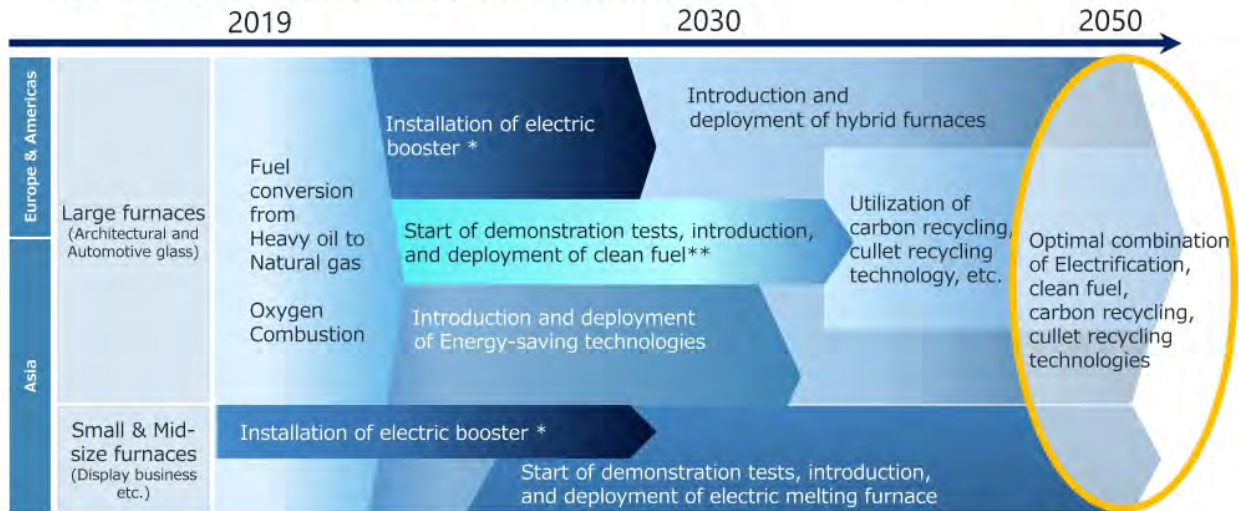


For glass production, there is a float glass melting furnace. We are aggressively working on the CO2 emission reduction compared to before. This is Europe measurement. After 1990, we changed the combustion process from heavy oil to natural gas and also fuel conversion and also used oxygen combustion method so that we are able to reduce the CO2 emission by 2019 by 30%.

**Medium- to Long-term Initiatives :  
Technology Roadmap for Reducing GHG Emissions in Float Glass Melting  
Process**



- Toward 2030, plan to prioritize electrification in Europe and Americas, and energy conservation in Asia.
- Toward 2050, aim to achieve the target by combining multiple technologies with a focus on electrification.



\*Energized auxiliary heating

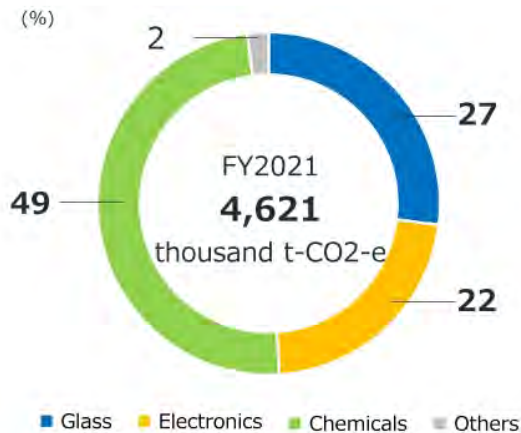
\*\*Ammonia, Hydrogen etc.

So this is the future initiative, a technological road map. In the glass production, the largest CO2 emission process is the melting process of float glass. So, our basic policy is to reduce GHG emissions through a combination of change in combustion process, various energy saving technologies and recycling technologies including raw material. As I said earlier, in each region, the CO2 emission coefficient is different. So, the top one is Europe and America, and the bottom one is Asia. And this is broken down by size of the furnace to find out the optimal way to reduce the emission.

As one example, there's the clean fuel demonstration test in the middle. This was announced in Japan. This is the demonstration using ammonia. By doing this kind of measurement, we are demonstrating clean fuel. And the AGC Group is one of the top manufacturers for the glass business. But compared to other glass manufacturers, on top of large furnaces for architectural and automotive glasses, we have small and mid-sized furnaces for display businesses. So, we do have a variety of manufacturing processes. The AGC Group intends to demonstrate leadership in reducing CO2 emissions in the industry by integrating and optimizing the energy-saving and CO2 reduction technologies of each of these technologies.

## Scope 2 Breakdown by segment

- The main emission source of Scope 2 is the chlor-alkali electrolysis facilities of the Chemicals segment.

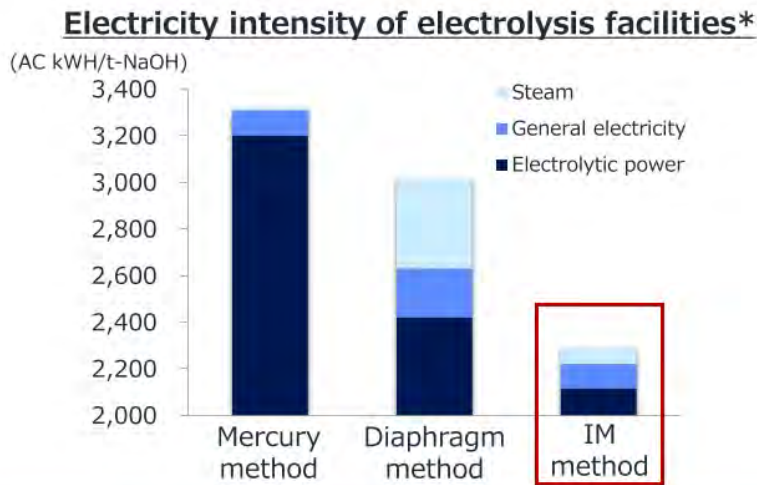


| Scope2               |                               |
|----------------------|-------------------------------|
| <b>Scope 2 total</b> | <b>4,621 thousand t-CO2-e</b> |
| ● Glass              | 1,126thousand t-CO2-e         |
| ● Electronics        | 1,022thousand t-CO2-e         |
| ● Chemicals          | 2,279thousand t-CO2-e         |
| ● Others             | 94thousand t-CO2-e            |

Now, next is a breakdown of Scope 2 segment. As you can see, the major emission sources, chemicals, the basic chemicals such as the chlor-alkali electrolysis facilities is the source of the emission. So I'd like to talk about how we are working on this to reduce the CO2 emission. Actually, the caustic soda and chlor-alkali like the PVC is a major product. And electricity is the major energy.

**Past initiatives:**  
**Reduction of CO2 Emissions from Chlor-alkali Electrolysis Facilities** 

- In 1975, we developed the "ion exchange membrane method (IM method)" for chlor-alkali electrolysis facilities (the first in the world), which has a remarkably low environmental impact, and have greatly reduced the electricity consumption rate.
- Through the sale of Flemion™ ion-exchange membranes, we also contributed to the reduction of the industry's environmental impact.



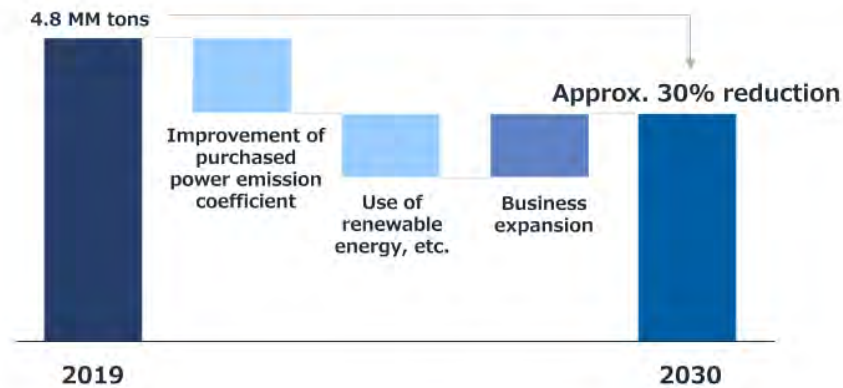
\*48% liquid caustic soda production

And AGC has the technology IM method. We are the first one to develop this so that we are able to reduce the electricity consumption rate drastically. And also Flemion, which is the ion exchange membranes are sold by us so that we are contributing to the reduction of the industry's environmental impact.

## Medium- to Long-term Initiatives: Reducing GHG Emissions in the Chemicals Business

- The Chemicals will promote further reduction of GHG emissions by lowering the electricity emission coefficient of purchased electricity and introducing renewable energy at each site.

**Image of future trends in GHG emissions\* in the Chemicals business**



\*Scope 1+2

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33

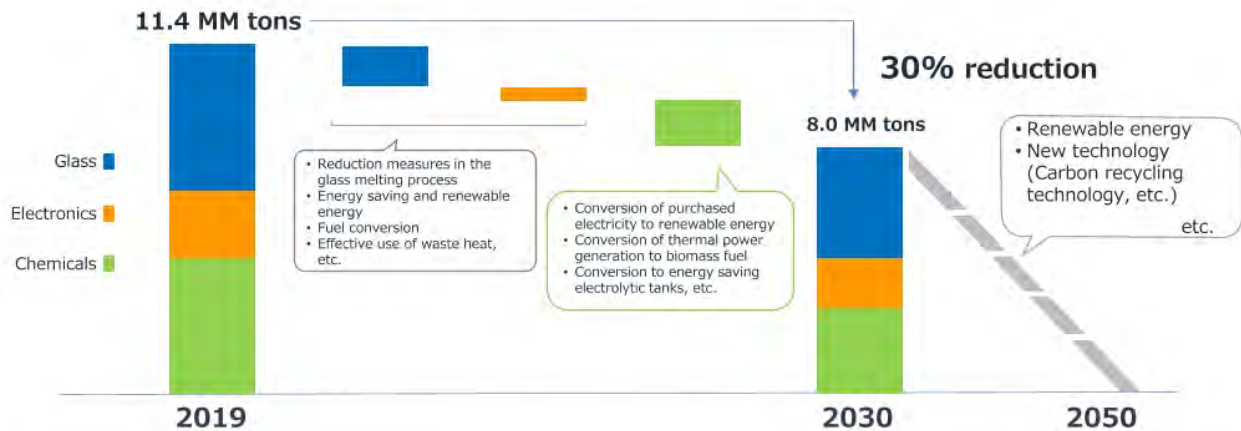
So this is the future initiatives. We will, of course, work on promoting the energy conservation. And also, we would like to work on the energy reduction and also emission reduction for the electricity purchased by us. And also, we would like to promote the electricity emission coefficient purchased and introducing renewable energy.



# GHG Emission Reduction Roadmap (Scope 1+2)

- AGC plans to achieve its targets through technological innovations in the glass melting process, the major source of its emissions, as well as by converting its chlor-alkali operations to renewable energy sources for electricity and using biomass fuels in its own thermal power generation.

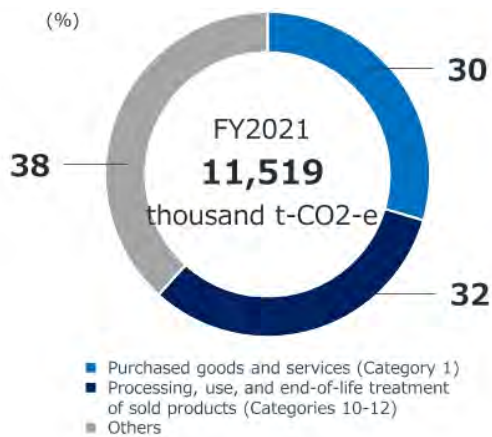
## GHG Emission Reduction Roadmap (Scope 1+2)



This is the total of the GHG emission by 2030. We would like to reduce our carbon footprint by 30% by 2030. And after that, we will accelerate our in-house development. But also work together with the entire supply chain and in each region and also in the industry as a whole, we would like to challenge on carbon neutral by 2050.

## Scope 3 Breakdown

- GHG emissions from the purchased goods and services, processing, use, and end-of-life treatment of sold products account for 60% of the total.



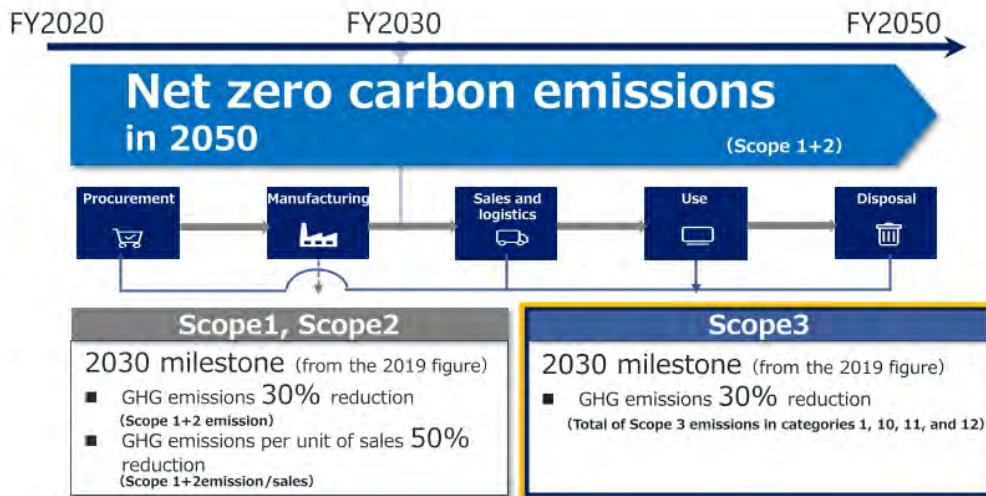
| Scope3  |  |
|---|--|
| <b>Scope 3 total</b>  | <b>11,519thousand t-CO<sub>2</sub>-e</b> |
| ● Purchased goods and services (Category 1)                                     | 3,406thousand t-CO <sub>2</sub> -e       |
| ● Processing, use, and end-of-life treatment of sold products (Category 10 -12) | 3,703thousand t-CO <sub>2</sub> -e       |
| ● Others Logistics/distribution, etc.   | 4,410thousand t-CO <sub>2</sub> -e       |

On page 35 is a breakdown of Scope 3.

As shown here, Scope 3 emissions from purchased products and services and from processes related to the processing of sold products account for approximately 60% of the total.

# New Scope 3 Reduction Targets Set

- In addition to Scope 1 and 2, the 2030 target for Scope 3 was set in June 2022. We accelerate efforts to reduce GHG emissions, including in the supply chain.



And as the AGC Group -- please take a look at the next page. For Scope 3 reduction target, there are major categories, which is category 1, 10 and 11 and 12. In total, we would like to reduce the emission by 30%. We are accelerating our initiative. And this is the actual initiatives.

To understand and address CO2 emissions throughout the supply chain



- Participation in the CDP supply chain program
  - Improve accuracy of supply chain emissions by item
  - Identify examples of reduction efforts by other companies, etc.

## CDP supply chain program

Phase 1 Engagement through questionnaire



Phase 2 Setting target KPIs and taking measures



Phase 3 Confirmation of results and further improvement

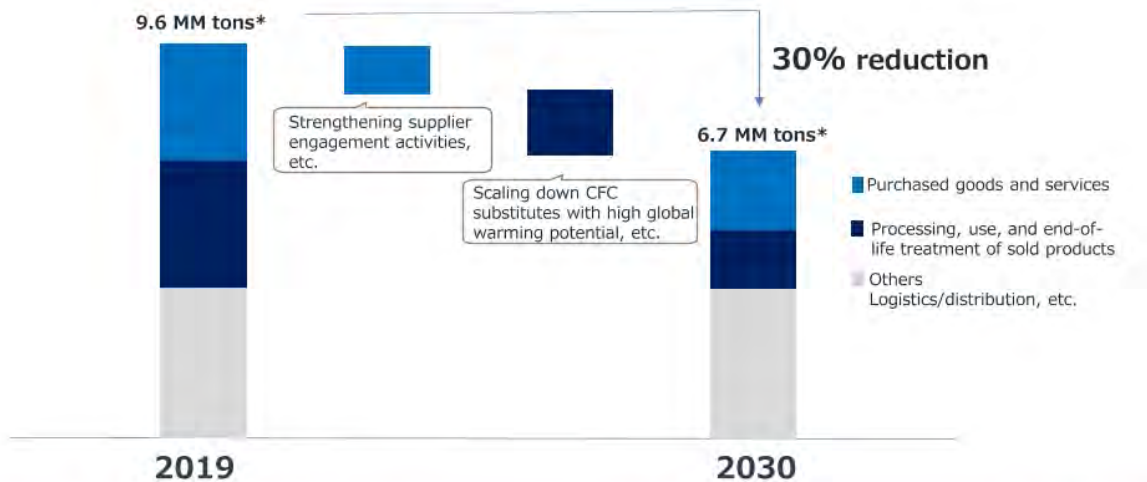
- Strengthening supplier engagement activities
  - Conduct periodic surveys to share awareness of issues with suppliers, ascertain actual conditions, and aim for GHG reduction throughout the supply chain.

This is supply chain engagement to reduce CO2 emissions for the supply chain. So we joined CDP supply chain program and also strengthen supply chain engagement activities so that we can reduce the emission for the entire supply chain.

## GHG emission reduction roadmap (Scope 3)

- AGC plans to achieve its targets by strengthening supplier engagement activities and scaling down the chlorofluorocarbon(CFC) products with high global warming potential.

### AGC Group's Scope 3 GHG emissions



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

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Page 38 is the detailed roadmap of reducing Scope 3 GHG emissions. There is the CFC product, alternative CFC product, which has high global warming potential. So we'd like to reduce that. And I'd like to talk about that later. So we talked about AGC's initiatives.

## 2. Initiatives to Address Climate Change

- Activities to date and structure
- Business portfolio transformation
- **Addressing Climate Change**
  - Address to GHG reduction
  - **Contributions to GHG reduction**

But now, I would like to talk about the contribution to the society in terms of GHG, the emission reduction.

## Initiatives for opportunities : Development of products that reduce environmental impact, etc.

- We promote product development and other measures with the aim of reducing environmental impact throughout the product lifecycle.

| Glass   | Electronics   | Chemicals  | Ceramics   |
|---|---|--|--|
| <ul style="list-style-type: none"> <li>- Float flat glass (products using recycled raw materials, Thinned glass)</li> <li>- Low-E double glazing glass</li> <li>- Coating glass</li> <li>- Photovoltaics-embedded glass</li> <li>- Thinned glass(chemically strengthened glass)</li> <li>- Automotive glass etc.</li> </ul> | <ul style="list-style-type: none"> <li>- Display glass (products using recycled raw materials)</li> <li>- Solar cell TCO glass</li> <li>- Float cover glass for PV module</li> <li>- Optical Materials</li> <li>- Materials for high-speed communication</li> <li>- High power LED glass ceramics substrate etc.</li> </ul> | <ul style="list-style-type: none"> <li>- Environmentally friendly refrigerant and solvents</li> <li>- Materials for fuel cells</li> <li>- Fluoropolymer</li> <li>- Fluoropolymer resin for coatings</li> <li>- Fluoropolymer resin for solar cell</li> </ul> <p>etc.</p> | <ul style="list-style-type: none"> <li>- Refractory (products using recycled raw materials)</li> <li>- High thermal insulation ceramic wall for furnace</li> <li>- Refractory/engineering for biomass power boilers</li> </ul> <p>etc.</p> |

### Past initiatives to reduce environmental impact

- We aimed to reduce 6 times of annual CO2 emissions by 2020 through energy-saving and energy-creating products. This was largely achieved.
- Going forward, we will refine our evaluation methods, including the LCA method\*, and set new management targets.

\* Life Cycle Assessment: A method for quantitatively assessing the environmental impact of a product or service over its entire life cycle or a portion thereof, as defined in the ISO international standards for environmental management.

Page 40 talks about that. AGC uses technologies so that we promote product development and other measures with the aim of reducing environmental impact throughout the product life cycle.

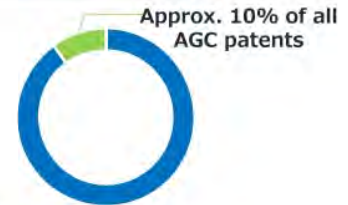
Before, by 2020, we aim to reduce six times the annual CO2 emission through energy-saving and energy-creating product. And we almost achieved this.

- We work to formulate rules to realize a sustainable society.

<Specific examples>

|  |   |
|--|---|
| Methodology for achieving ZEB*1  | Contributing to the publication of technical specifications in the ISO (International Organization for Standardization) |
| Standardization of circular economy in ISO   | Contributing to the effective use of resources by developing indicators of product recyclability, etc.                  |
| Standardization of reduction contribution*2 in IEC (International Electrotechnical Commission) | Contributing to GHG reduction throughout product lifecycle  |

- The number of patents\*4 classified as SDGs\*3 that contributes to a low-carbon society accounts for approximately 10% of the total number of patents held by the Company.



- Promote third-party certification of environmental products

Cradle to Cradle™ certification and LEED\*5 credits for laminated glass products from AGC Glass Europe (2010, first in Europe in the field of flat glass and coating glass)



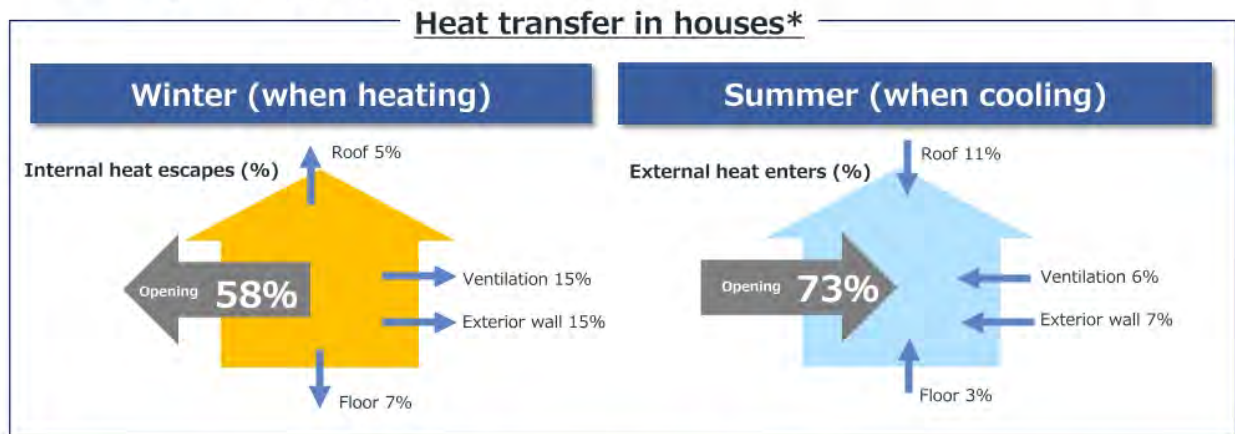
\*1 ZEB (Net Zero Energy Building): A building that aims to reduce the balance of primary energy consumed to zero.  
 \*2 Quantified reduction in GHG emissions due to the product over the entire life cycle of the product being evaluated for its environmental impact reduction effect.  
 \*3 The classification of patents held for SDGs (7, 12, 13) was conducted using PatentSight, a patent analysis tool from LexisNexis.  
 \*4 595 patents as of June 2022, both registered and in the process of registration (family)  
 \*5 Green Building Certification

So, going forward, please take a look at Page 41, we would like to accelerate these initiatives. We would like to have the appropriate rules and also evaluation method is important. And we'd like to join the creation of such a framework. And also, we would like to realize the low carbon society by using a patent, 10% of the total number of patents held by the Company is contributing to low carbon society.



## Glass Business Initiatives: Improving Energy Consumption Efficiency of Buildings (1)

- As we work toward decarbonization, the improvement of energy efficiency of buildings is an issue.
- Improving the energy consumption efficiency of buildings requires reducing heat outflow/inflow from the building, and it is important to improve the functionality of window glass in openings.



**The key is improvement of thermal barrier and insulation performance of openings (windows), which are the main source of heat transfer.**

\* Based on example calculations for a house with insulation performance at the 1999 energy conservation standard level by Japan Construction Materials & Housing Equipment Industries Federation

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42

And I would like to talk about contributions of glass using page 42.

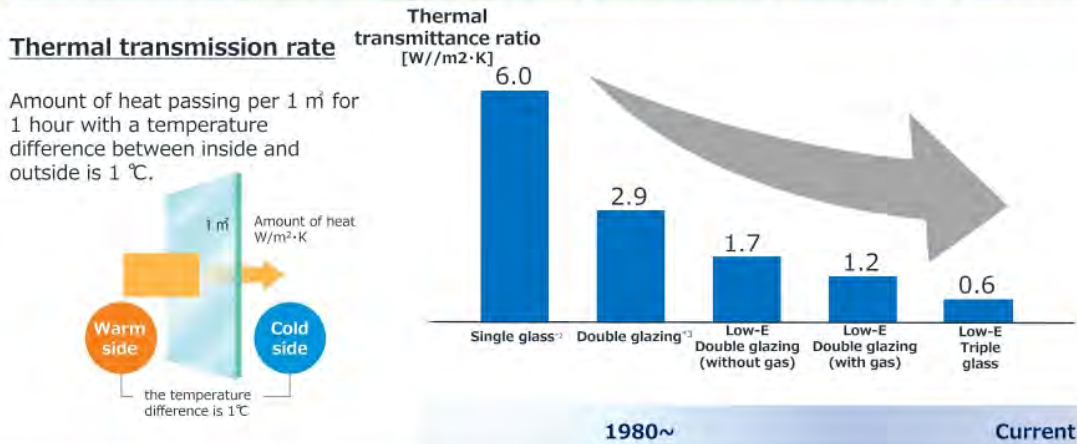
First of all, energy consumption in buildings is one of the major issues in society's efforts to decarbonize.

Energy consumption in a building -- actually, in the housing, this is the heat. The transfer has a big impact. On the left-hand side is winter time, right-hand side is summertime. The heat escapes and heat enter, inflow and outflow contribute to the heat transfer. We would like to improve that. And that actually contributed to the energy savings and conservation in the housing and buildings.

# Glass Business Initiatives: Improving Energy Consumption Efficiency of Buildings (2)

- Progress to date, we have developed and supplied products with higher insulation performance, and are working for further improvement, thereby contributing to the reduction of CO2 emissions of buildings.
- State-of-the-art Low-E Triple glass reduces heat transfer by approximately 90%\*1 compared to single glass and is attracting attention as a product that contributes to the environment with its excellent heat insulation effect.

## Progress of window glass insulation performance



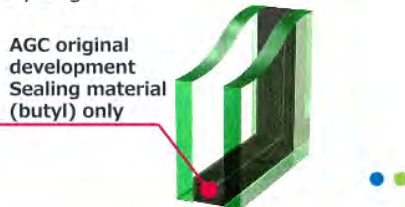
\*1 Comparison of thermal transmission rate between 3mm float glass and Low-E double glazing glass  
\*2 3mm float glass \*3 transparent double glazing with a 12mm hollow layer

So this is the actual product. As the AGC Group, opening, meaning the window, we developed high-insulated glass for the window. So Low-E double layer glass, which is the highest technology compared to the single glass, reduces heat transfer approximately 90%. So we can make sure that these products are used and penetrated to the global society, then we can contribute to the GHG emission reduction.

- We have developed and will continue developing new products that contribute to reducing environmental impacts.

## Thermocline™

Highly durable, long-life, high-insulation double glazing using AGC's original material, as well as easy recycling



## Vacuum-Insulating Glass [FINEO]

World-class thermal insulation performance and high durability. Addressing Renovation Demand in Europe



## BIPV\*

Building Integrated Photo Voltaics with power-generating cells sealed between the glass



## Low-carbon Glass

Significantly reduces GHG emissions during the product life cycle



\* Building Integrated PhotoVoltaics

● : Products that contribute to GHG emissions reduction

● : Products that contribute to a circular society

● : Products with reduced GHG emissions

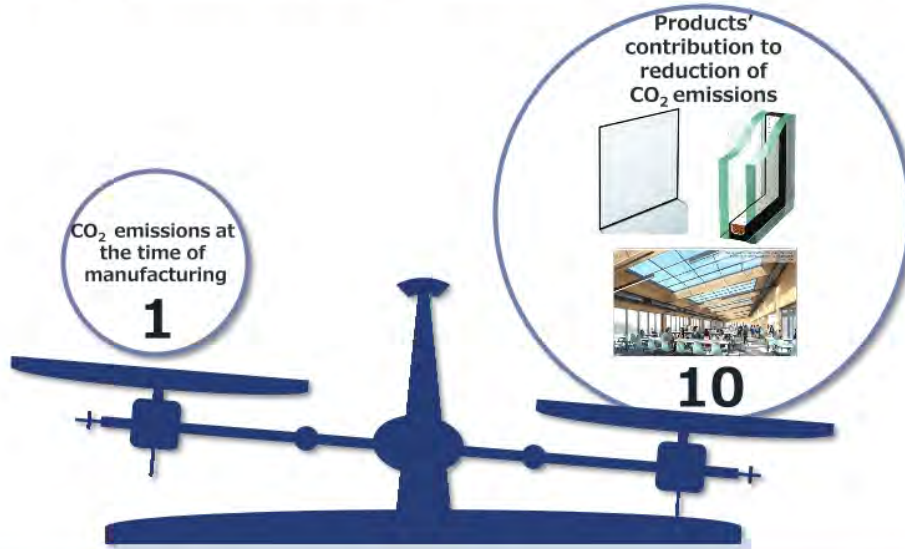
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44

And also, we would like to continually develop the contributing technologies and sell the product.

## Initiatives in the Glass Business

- We developed a number of environmentally friendly products such as vacuum insulated glass, building integrated photovoltaic power generation glass.
- Architectural glass in Europe contributes to reduction of CO<sub>2</sub> emissions during product use by 10 times\* the amount emitted during manufacturing.

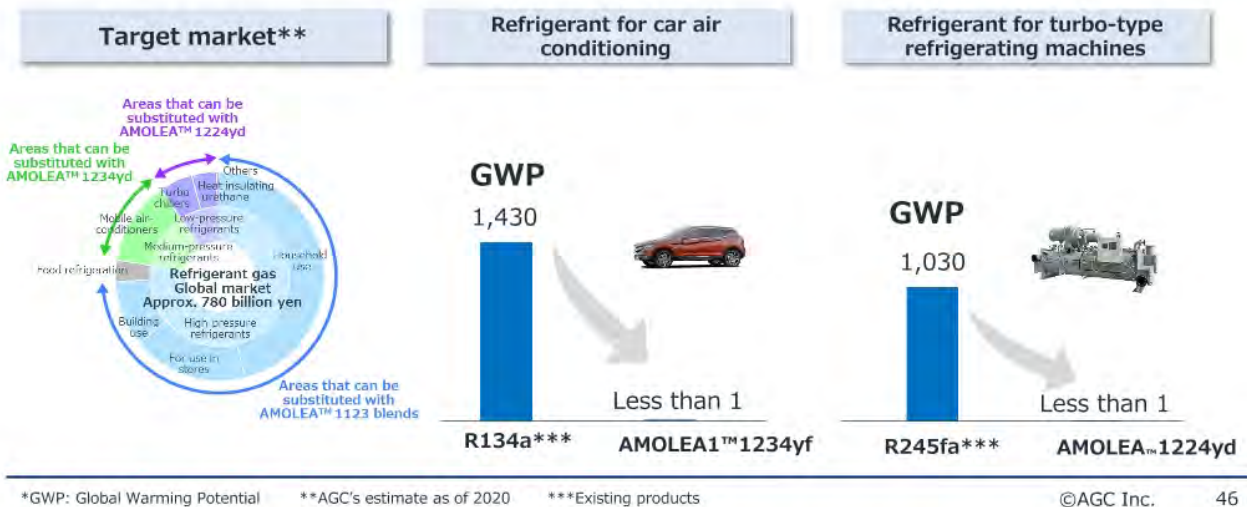


And this is impact on page 45. For the glass business, if the CO<sub>2</sub> emission at the time of manufacturing is 1, then product contribution to the reduction of CO<sub>2</sub> emission is 10x higher than this 1.

# Initiatives in the Chemicals Business: Environment-friendly Refrigerants and Solvents



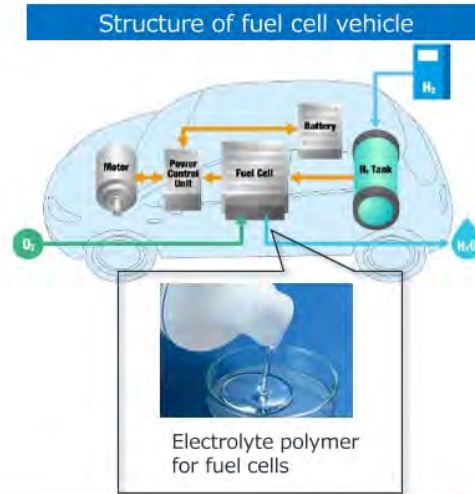
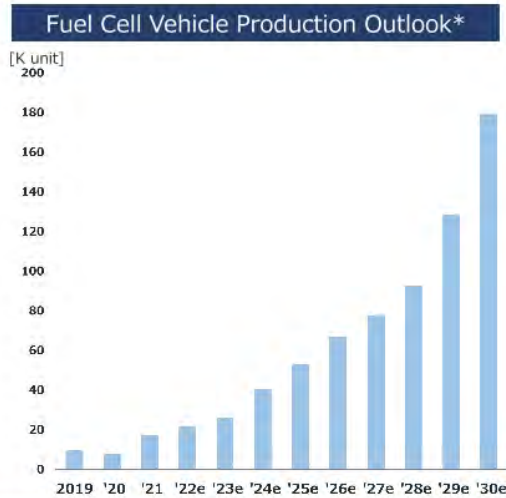
- The Chemicals supply new environment-responsive refrigerant/solvent with extremely low global warming potential (GWP\*)
- Contributes to the prevention of global warming



And also, for chemical business, the automobile air conditioning, we are developing the environment-responsive refrigerant and solvent with extremely low global warming potential. GWP, which is global warming potential is 1 of 10,000 and we would like to develop such product and make sure that this is penetrated to the society.

## Initiatives in the Chemicals Business: Contributing to the Realization of a Hydrogen Society

- Demand growth in Electrolyte polymer for fuel cells will accelerate together with the increased use of fuel cell vehicles and technological advancement toward the realization of a hydrogen society.
- Overwhelming No.1 position by realizing both high power generation and high durability



\*Based on IHS data

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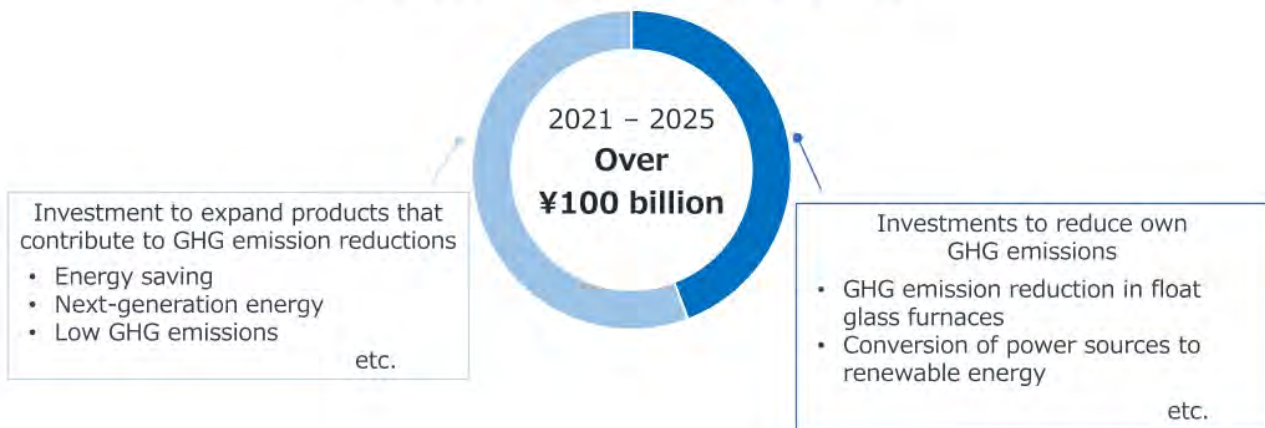
47

And for the Electrolyte EV, and there is the fuel cell, which we expect to increase for the usage of hydrogen cars. AGC has electrolyte polymer for fuel cell, has a high-power generation and high durability. Right now, at this moment, we have overwhelming number one position. With the EV vehicle penetration, we expect this business will grow.

## Future Investment Plans for Overall Addressing Climate Change

- We will invest more than ¥100 billion\* over 5 years to 2025 to address climate change.

### Cumulative investments related to address climate change (budgeted)



\*Excludes R&D expenses

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48

Now, for climate change, we would like to talk about a cumulative investment plan. By 2025, for over five years, we will invest more than JPY100 billion. Now, this talks about GHG emission reduction investment, and this also covers the investment to reduce and also contribute to social GHG emission reduction. The technological development cost is not included in this investment.

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

Last but not the least, as Mr. Miyaji mentioned at the beginning, the AGC Group, as a global material manufacturer, we would like to contribute to society by realizing our aspirations for the year 2030 as shown here. For that, of course we have to achieve the financial target. However, we would like to take proactive leadership role as an industry leader in addressing climate change issues.

This concludes my presentation. Thank you very much.

[END]