

## Start of Study on Production and Sales of the World's First Circular Carbon Methanol Made from CO<sub>2</sub> Generated from Glass Production

**Tokyo, August 31, 2023** - AGC Inc. (AGC; Headquarters: Tokyo; President: Yoshinori Hirai) and Mitsubishi Gas Chemical Company, Inc. (MGC; Headquarters: Tokyo; President: Masashi Fujii) have agreed to begin the study regarding the production and sale of methanol made from CO<sub>2</sub> generated from AGC's architectural glass production, by applying the methanol production technology developed by MGC. This study targets commercialization by around 2030 at AGC's Kashima Plant, and when achieved, it will be the world's first<sup>\*2</sup> case of producing and selling "Circular Carbon Methanol (CCM)"<sup>\*1</sup> that effectively utilizes the CO<sub>2</sub> generated from glass production.

In recent years, CCU<sup>\*3</sup> technology, which captures and utilizes CO<sub>2</sub>, has been attracting attention as an innovative technology for achieving carbon neutrality by 2050. Methanol also has a wide range of applications as an essential chemicals, and in recent years, its use for conversion to ethylene and propylene has been expanding. As such, it is expected that its utilization will widen the possibility towards carbon neutrality.

The goal of this study is to use CCU technology to convert the CO<sub>2</sub> generated at Japan's largest architectural glass manufacturing facility into methanol, which will then be produced and sold. While chemical products that use captured CO<sub>2</sub> as a raw material can reduce environmental burden, the higher cost associated with CO<sub>2</sub> capture and conversion compared to conventional manufacturing methods is an issue. To address this, MGC will promote the social value of its "CCM," which offers low environmental burden, and cultivate customers through its existing sales network. In addition to this study, AGC is also considering replacing methane gas used as a raw material in its own chemical business with CCM, with a view to commercializing chemical products based on carbon recycling.

The AGC Group has set "promoting sustainability management" as one of the key strategies in its [medium-term management plan, AGC plus-2023](#), and has set a target of net-zero carbon emissions<sup>\*4</sup> by 2050. AGC's Architectural Glass and Chemicals businesses will work together to realize the production and sale of methanol utilizing the CO<sub>2</sub> generated from glass production, thereby contributing to the attainment of a sustainable society, while aiming for continued growth and evolution.

Based on the MGC Group's mission of "creating value to share with society," MGC has been promoting the "CCM concept Carbopath<sup>TM\*5</sup>" to convert CO<sub>2</sub>, waste plastics, biomass, etc. to methanol for use in chemical products, fuels, and power generation, using methanol production technology based on its proprietary catalysts developed over the years. It aims to actively contribute to the reduction of greenhouse gas emissions and the transition to a circular economy through social implementation of the concept.

---

<Media inquiries>

Chikako Ogawa, General Manager, Corporate Communications & Investor Relations Division, AGC Inc.

(Contact: Nakao; Tel: +81-3-3218-5603; [Contact form](#))

Public Relations Department, Administrative Personnel Division, MITSUBISHI GAS CHEMICAL CO., INC.

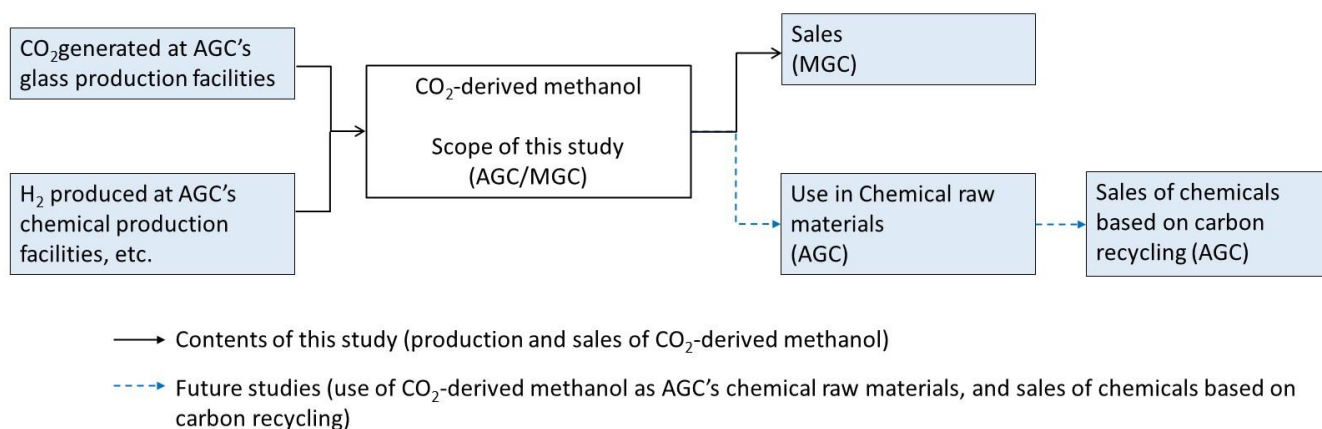
(Tel: +81-3-3283-5040)

## Notes

- \*1 “CCM:” Defined as methanol made from captured CO<sub>2</sub>, hydrogen derived from renewable energy sources, or gasified recycled materials, as part of MGC’s CCM concept.
- \*2 Based on research by AGC.
- \*3 Carbon dioxide Capture and Utilization
- \*4 Scope 1 and Scope 2
- \*5 The “CCM concept” has been branded as Carbopath™. The name Carbopath™ expresses MGC’s desire to be a pioneer in promoting the CCM concept.

## Reference

Content of this study and future studies




---

### <Media inquiries>

Chikako Ogawa, General Manager, Corporate Communications & Investor Relations Division, AGC Inc.

(Contact: Nakao; Tel: +81-3-3218-5603; [Contact form](#))

Public Relations Department, Administrative Personnel Division, MITSUBISHI GAS CHEMICAL CO., INC.

(Tel: +81-3-3283-5040)