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Mitsubishi Gas Chemical Company, Inc.
Research Institute of Innovative Technology for the Earth

Mitsubishi Gas Chemical and Research Institute of Innovative Technology for the Earth to Demonstrate Technology for Carbon Capture, Utilization and Storage at Osaka-Kansai Expo

Mitsubishi Gas Chemical Company, Inc. (MGC; Head Office: Chiyoda-ku, Tokyo; President: Yoshinori Isahaya) and the Research Institute of Innovative Technology for the Earth (RITE; Headquarters: Kizugawa-Shi, Kyoto; President: Kenji Yamaji) announced today that they have signed an agreement regarding the transfer of part of the CO_2 recovered using a direct-air-capture (DAC) device at the venue of the Osaka-Kansai Expo 2025 in Japan. The collaboration represents a pioneering initiative to advance the societal implementation of carbon capture, utilization, and storage (CCUS) in Japan.

The collaboration will showcase innovative technologies that capture CO_2 from the atmosphere and transfer it to underground storage while also utilizing it for methanol production. It will serve as a model case of CCUS in Japan, demonstrating cutting-edge environmental technologies that aim not only to achieve carbon neutrality but also to reduce CO_2 emitted in the past, aligning with the "Beyond Zero" concept.

RITE has been supporting the development and adoption of CCS (Carbon Capture and Storage) technology, which captures CO_2 before it is emitted into the atmosphere and then stores it safely underground. CCS is essential for mitigating climate change and is regarded as a key technology for enabling "Beyond Zero," as it facilitates negative emissions. Through their work at the Osaka-Kansai Expo, RITE is demonstrating DAC technologies as part of the Moon Shot Research and Development Program promoted by Japan’s New Energy and Industrial Technology Development Organization (NEDO).

Since 2016, the Geological Carbon Dioxide Storage Technology Research Association, led by RITE, has been advancing the development of large-scale CO_2 storage technologies suited to Japan’s domestic reservoirs. MGC joined the association in 2021 to jointly explore innovative technologies related to CCUS, including the development of CO_2 underground storage technology. Through their collaboration within the association, MGC and RITE have accelerated technology development for underground CO_2 storage and contributed to the early societal implementation of CCS.

MGC is also driving efforts to advance CCU (Carbon Capture and Utilization) technologies. The company has developed a proprietary platform, “Carbopath™,” which enables the production of methanol from atmospheric CO_2 or other waste materials. This methanol can then be used to sustainably manufacture chemicals and fuels. MGC plans to utilize recovered CO_2 for underground storage and methanol production as part of a broader environmental circular system.

The Carbopath™ platform not only reduces greenhouse gas emissions but also transitions manufacturing away from reliance on fossil resources by promoting efficient resource recycling centered on methanol. This initiative aligns with MGC Group’s mission of "Creating Value to Share with Society," contributing to carbon neutrality while transforming societal systems for greater harmony between the economy and the environment.

Through this collaboration, MGC and RITE aim to further advance CCUS technologies that bridge CO_2 capture, storage, and utilization. Utilizing their combined expertise, the two parties will continue to strengthen their joint research efforts to accelerate initiatives that contribute to the early realization of a carbon-neutral society.

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【Inquiries】

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