March 14, 2024

Tokyo Gas Co., Ltd.

Sumitomo Corporation

Joint Feasibility Study on Direct Air Capture with Carbon Storage

Advancement towards carbon neutrality through application of negative emission technologies

Tokyo Gas Co., Ltd. (President: Shinichi Sasayama; hereinafter "Tokyo Gas") and Sumitomo Corporation (President: Masayuki Hyodo; hereinafter "Sumitomo Corporation") today signed a Memorandum of Understanding to jointly conduct a feasibility study (hereinafter "the Study") on Direct Air Capture with Carbon Storage (hereinafter "DACCS"[1]).

According to estimates by the International Energy Agency (IEA), Intergovernmental Panel on Climate Change (IPCC) and other organizations, the removal of a maximum of 10 billion tons of CO_2 per year by 2050 through the use of DACCS and other negative emissions[2] technologies will be necessitated in order to achieve carbon neutrality.

In recent years, negative emission technologies have been attracting attention in Japan and internationally. In Japan specifically, the Ministry of Economy, Trade and Industry established “Study Group for Creating Markets of Negative Emissions Technologies" in 2023 to categorize and analyze domestic and international technological development and business trends. It aims to discuss and consider policies for creating a negative emission market in Japan, including consideration towards the future directions that policies can take.
Consequently, the global market for carbon credits issued through negative emission technologies is forecast to grow from $2.1 billion in 2022 to $80 billion by 2030.[3]

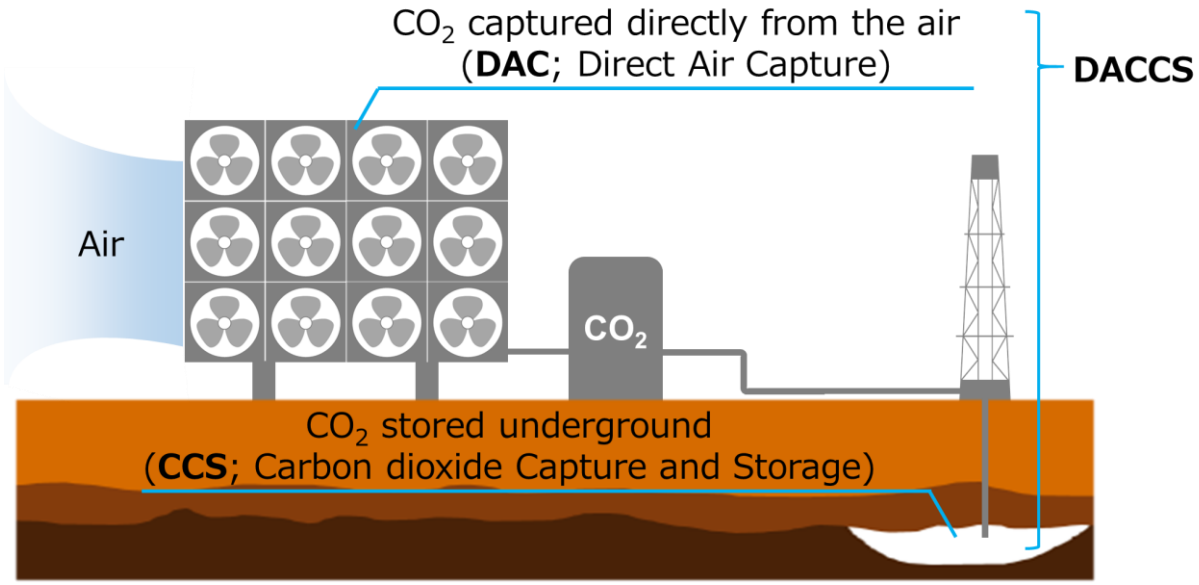
Both companies have been studying the use of Direct Air Capture (DAC[4]) technology from its early stages, including investment[5] into a U.S. based DAC technology venture company in 2023.

In the Study, the knowledge and experience that Tokyo Gas has in DAC technology and plant engineering will be combined with the expertise that Sumitomo Corporation, with its global network, has in the low-carbon energy business, sector, including CCS, to examine the business feasibility of DACCS. The Study will

include the assessment of suitable storage sites in North America amongst other regions and evaluation of DAC technologies, from Japan and overseas, with the aim of identifying future joint business opportunities.

Moving forward, we will continue to implement and expand the use of DACCS and thereby contribute to the realization of a carbon-neutral society.

DACCS Overview Diagram



Tokyo Gas's initiatives toward carbon neutrality

Tokyo Gas has outlined its "Challenge to achieve Net-Zero CO_2 emissions" set forth in Tokyo Gas Group's Management Vision, "Compass 2030", and is promoting the development of technologies to realize carbon neutrality. Tokyo Gas will lead the efforts towards Net-Zero CO_2 emissions by utilizing DAC technologies for Carbon Capture, Utilization and Storage (CCUS[6]) technologies including DACCS, thereby contributing to the realization of the Japanese government's goal of carbon neutrality by 2050.

Sumitomo Corporation's initiatives toward carbon neutrality

The Sumitomo Corporation Group is striving to combat climate change with the long-term objectives of becoming carbon neutral in its business activities by 2050 while taking on the challenge of achieving a circular economy. Sumitomo Corporation considers CCUS to be an important means to achieve its carbon neutral objectives, and is therefore developing businesses in the areas of Carbon capture, utilization, transportation and storage globally. By creating and selling CO_2 removal credits through negative emission

technologies such as DACCS and BioEnergy with Carbon Capture and Storage, (BECCS), we will contribute to the realization of a carbon-neutral society.

[1] DACCS: Direct Air Capture with Carbon Storage

[2] To achieve net-negative CO_2 emissions through means such as removal of CO_2 from the atmosphere

[3] Carbon removals: How to scale a new gigaton industry (published by McKinsey, December 2023)

[4] DAC: Direct Air Capture

[5] Investment in and Collaboration with Global Thermostat, a U.S.-based Firm with Leading-Edge Direct Air Capture Technology (announced by Tokyo Gas on January 19, 2023); Sumitomo Corporation invests in Direct Air Capture technology pioneer Global Thermostat (announced by Sumitomo Corporation on May 30, 2023)

[6] CCUS: Carbon Dioxide Capture, Utilization and Storage