



October 23, 2023
Cosmo Energy Holdings Co., Ltd.
Toyo Engineering Corporation

Cosmo Energy and Toyo Engineering to Initiate a Joint Study on
Direct Synthesis of CO₂ Emitted from Refineries and Other Facilities into Methanol

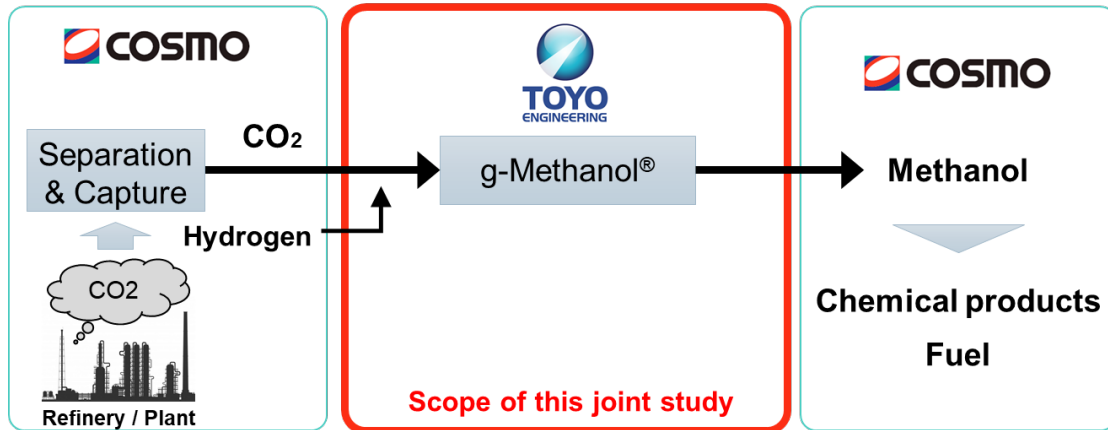
Cosmo Energy Holdings Co., Ltd. and Toyo Engineering Corporation (hereafter, "TOYO") today (October 23) concluded a basic agreement regarding a joint study aimed at direct synthesis of CO₂ into methanol using a catalyst.

TOYO possesses a licensed technology (g-Methanol®) that enables direct synthesis of methanol from hydrogen and CO₂ separated and captured from refineries and plants. Since CO₂ can be used directly as a direct feedstock, it is expected that methanol can be produced efficiently without having to go through multiple processes.

Methanol converted from CO₂ is an important basic chemical feedstock that can be applied in chemical products, fuels (marine fuels, e-fuel), and the like, and is therefore attracting attention for its use in CCU (carbon capture and utilization) aimed at decarbonization.

Through this joint study, the two companies will examine factors such as the CO₂ reduction effect and investment profitability, with the aim of producing sustainable products derived from CO₂ emitted from refineries and other Cosmo Energy Group facilities.

Joint study conceptual diagram



The Cosmo Energy Group announced its 2050 Carbon Net Zero Declaration and is accelerating decarbonization-related initiatives under its Vision 2030 and Seventh Consolidated Medium-Term Management Plan Oil & New ~Next Stage~. This project is one of a number of concrete measures that the Group is taking to "strengthen competitiveness of the *Oil* Business and pursue low carbonization" as set forth in Vision 2030. It is being carried out with the goal of solving societal challenges and achieving sustainable corporate development toward the realization of the Group's management vision of achieving "harmony and symbiosis between our planet, man and society."

TOYO is transforming its business portfolio and profit structure by strengthening its existing businesses and developing new business fields, mainly in the area of carbon neutrality, based on its 2021-2025 Medium-Term Management Plan. The Company also aims to achieve net zero greenhouse gas (GHG) emissions by 2050. By promoting the social uptake of its proprietary g-Methanol® technology, TOYO will realize its mission of "Engineering for Sustainable Growth of the Global Community."

(End)