

June 7<sup>th</sup>, 2022  
Abu Dhabi National Oil Company  
ENEOS Corporation  
Mitsui & Co., Ltd.

## **Joint Study Agreement formed to evaluate development of clean hydrogen supply chain between UAE and Japan**

The three companies Abu Dhabi National Oil Company (ADNOC) of the United Arab Emirates ("UAE"), ENEOS Corporation ("ENEOS", President: Saito Takeshi), and Mitsui & Co., Ltd. ("Mitsui", President and CEO: Kenichi Hori), have formed a Joint Study Agreement to begin evaluating the development of a clean hydrogen supply chain between UAE and Japan.

The project aims to be developed in two phases, with first phase utilizing by-product hydrogen from ADNOC's system in Ruwais Industrial Area in Abu Dhabi, while Phase 2 envisages greenfield blue hydrogen\*1 production from natural gas. The hydrogen will be transformed to methylcyclohexane ("MCH")\*2, an efficient form of hydrogen transport vector to export to Japan. The three companies will conduct technical and engineering verification of a hydrogen production facility with a capacity of 50,000 tons per year, and a feasibility study on the potential to expand this facility to commercial production of 200,000 tons per year.

ADNOC is accelerating its efforts in decarbonization, and in this regard CCUS options are being explored with an aim to establish a highly competitive blue hydrogen supply business utilizing existing facilities such as refineries and petrochemical plants. As part of these initiatives, ADNOC will be responsible for the hydrogen production component of this joint feasibility study.

One of the ENEOS Group's envisioned goals stated in Long-Term Vision to 2040 is contributing to the achievement of a low-carbon, recycling-oriented society, and ENEOS Group are aiming to achieve carbon neutrality. ENEOS, is working to build a CO2-free hydrogen supply chain, will lead the verification of MCH production and shipping facilities in the UAE as a part of "Green Innovation Fund Project (Large-scale demonstration of an MCH supply chain)" which was adopted by the National Research and Development Agency, the New Energy and Industrial Technology Development Organization (NEDO)

Mitsui has been developing and participating in liquefied natural gas (LNG) projects in the UAE with ADNOC since the 1970s, and since 2017, through participation in the Advanced Hydrogen Energy Chain Association for Technology Development (AHEAD), the company has engaged in R&D for the large-scale transportation and storage of hydrogen using MCH. In contributing to this project, Mitsui

will draw on the knowledge and experience gained through these LNG and hydrogen-related operations.

The three companies aim to establish a stable and economically viable supply chain of clean hydrogen, leveraging their respective assets as well as their accumulated technologies and knowledge to achieve carbon neutrality.

\*1 hydrogen produced from CO<sub>2</sub> captured and stored in the production process

\*2 MCH is a hydrocarbon compound that exists in a liquid state at normal temperature and pressure. It can be transported and stored using existing refinery facilities such as tanks, pipes, and wharfs, as well as petroleum and chemical transportation infrastructure such as chemical tankers and lorries.



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Dr Sultan Al Jaber, CEO of ADNOC and Minister of Industry and Advanced Technology,  
Koichi Hagiuda, Minister of Economy, Trade and Industry, Khaled Salmeen, Executive Director of ADNOC,  
Takeshi Saito, President of ENEOS, and Kenichi Hori, President and CEO of Mitsui