

**PRESS RELEASE**

May 26, 2020

**Hydrogen transported by sea used for power generation for the first time  
- The World's First Global Hydrogen Supply Chain Demonstration Project -**

Chiyoda Corporation (“Chiyoda”), a member of The Advanced Hydrogen Energy Chain Association for Technology Development (AHEAD) \*1, is pleased to announce the successful commencement of the supply of SPERA hydrogen, which was transported from overseas by sea, to the gas turbine in Mizue Thermal Power Plant in TOA OIL CO., LTD.’s Keihin Refinery, located in the Kawasaki Coastal Area in Japan. Hydrogen used for the gas turbine was separated from Methylcyclohexane (MCH) \*2, which had been produced in Brunei Darussalam and shipped to Japan, at our dehydrogenation plant located in the said site. Hydrogen transported by sea has been used for power generation for the first time in Japan, which marks a significant milestone towards the realization of “Hydrogen Society”.

This process is part of the "Demonstration Project for a Hydrogen Energy Supply Chain Utilizing the Organic Chemical Hydride Method\*3", undertaken by AHEAD and supported by New Energy and Industrial Technology Development Organization of Japan (NEDO).

We have moved another step closer to the commercialization of hydrogen power generation, by adding a new element of “demand for hydrogen power generation”, a key to the mass consumption of hydrogen in the future, to the world’s first international hydrogen supply chain; a series of processes including MCH production in Brunei, maritime transport of MCH, and dehydrogenation of MCH in Japan.

The Strategic Roadmap for Hydrogen and Fuel Cells, formulated by Ministry of Economy, Trade and Industry (METI) in March 2019, states the importance of hydrogen-fueled power generation towards a low carbon society, along with the transition to renewable energy. The Basic Hydrogen Strategy and the Fifth Strategic Energy Plan, Japan’s energy policies towards 2030, aim to achieve the commercialization of hydrogen-fueled power generation in 2030.

Chiyoda will work in close cooperation with Mitsubishi Corporation, Mitsui & Co., and Nippon Yusen Kabushiki Kaisha, the other association members of AHEAD, to confirm the effectiveness of global hydrogen transportation through this project.



Dehydrogenation Plant  
Kawasaki, Japan



Hydrogen is supplied to Gas Turbines  
(Courtesy of TOA OIL CO., LTD.)

\*1 Overview of AHEAD

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President: Takakazu Morimoto

(Deputy Division Director, Frontier Business Division, Chiyoda Corporation)

Members: Mitsubishi Corporation, Mitsui & Co., Ltd., Nippon Yusen Kabushiki Kaisha, and Chiyoda Corporation,

Established: July 3, 2017

Research Partners: Mitsubishi Hitachi Power Systems, Ltd., Development Bank of Japan Inc.

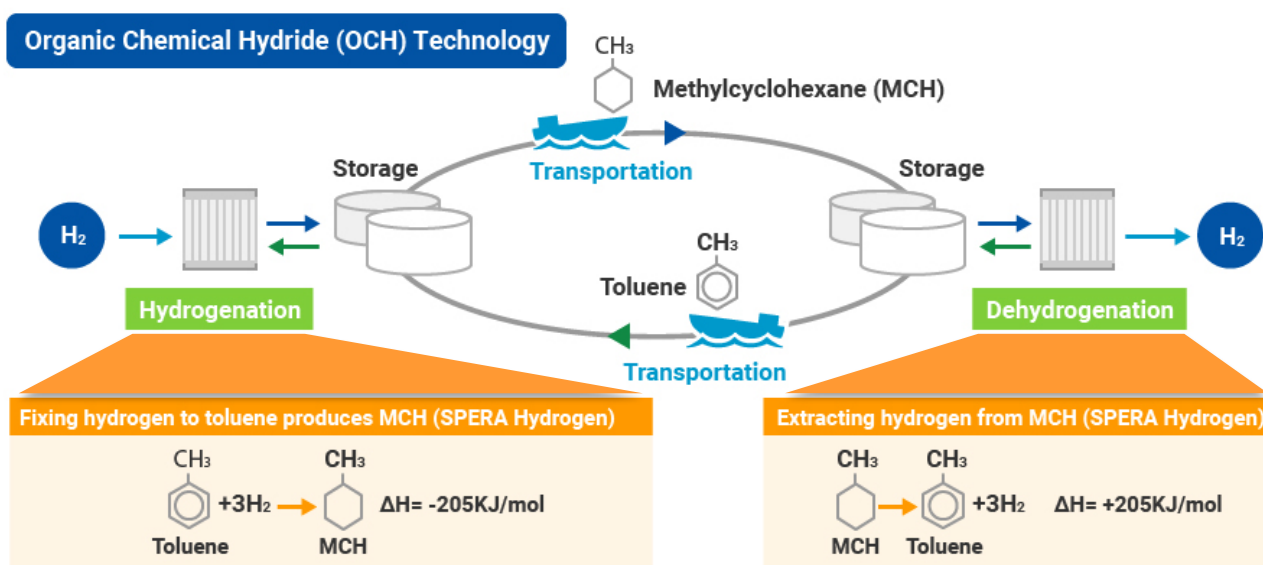
\*2 Methylcyclohexane (MCH)

A liquid produced from toluene and hydrogen, which can be handled in a liquid state at ambient temperature and pressure. It is widely used in many fields and products, a solvent for correction fluids is one of the examples.

\*3 Organic Chemical Hydride (OCH) Technology using MCH

A technology to store and transport hydrogen in the form of MCH, which is a liquid at ambient temperature and pressure, and separate hydrogen into gas and toluene from MCH.

Toluene separated from MCH will be returned to the hydrogen supplying location, where it is integrated with hydrogen and transformed into MCH again. The toluene can be repeatedly reused as a hydrogen carrier.



For more information, please contact:

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