

30 July 2021

Chiyoda Corporation sign an MOU to study importing hydrogen on a commercial scale into the Port of Rotterdam, The Netherlands, using SPERA Hydrogen™

Chiyoda Corporation (Chiyoda) is pleased to announce that it has entered into an MOU with the Port of Rotterdam Authority and Koole Terminals in the Netherlands, and Mitsubishi Corporation to jointly study importing hydrogen on an international scale utilizing Chiyoda's hydrogen storage and transportation technology; 'SPERA Hydrogen'.

The Port of Rotterdam Authority released its Hydrogen Master Plan in May 2020, aiming to promote the development of a hydrogen supply chain in northwestern Europe and become a hub for hydrogen imports. The Authority is aiming to import 100,000 to 200,000 tons of hydrogen in 2025 and 300,000 to 400,000 tons in 2030, with an estimated 20 million tons of imported hydrogen to flow through the Port of Rotterdam annually by 2050.

Chiyoda's SPERA Hydrogen storage and transportation technology is expected to play a pivotal role in achieving these targets and the MOU signatories are discussing the introduction of the technology and related business opportunities.

Chiyoda will provide engineering studies centered on SPERA Hydrogen technology to promote import and use of hydrogen, aiming to support CO₂ emission reductions and realize a future sustainable environment in Europe.

SPERA Hydrogen is Chiyoda's technology to transport and store hydrogen using a Liquefied Organic Hydrogen Carrier (LOHC), with methylcyclohexane (MCH)^{*1} as the hydrogen carrier. In December 2020, the world's first 'International Hydrogen Supply Chain' to transport hydrogen from Brunei Darussalam to Japan utilizing SPERA Hydrogen MCH technology was successfully completed. The technology enables MCH, in a liquid state at ambient temperature and pressure, to be stored and transported safely, making it comparable to petroleum and other chemical products. By utilizing existing infrastructure and current international petrochemical product standards, the massive initial investment burden is significantly reduced.

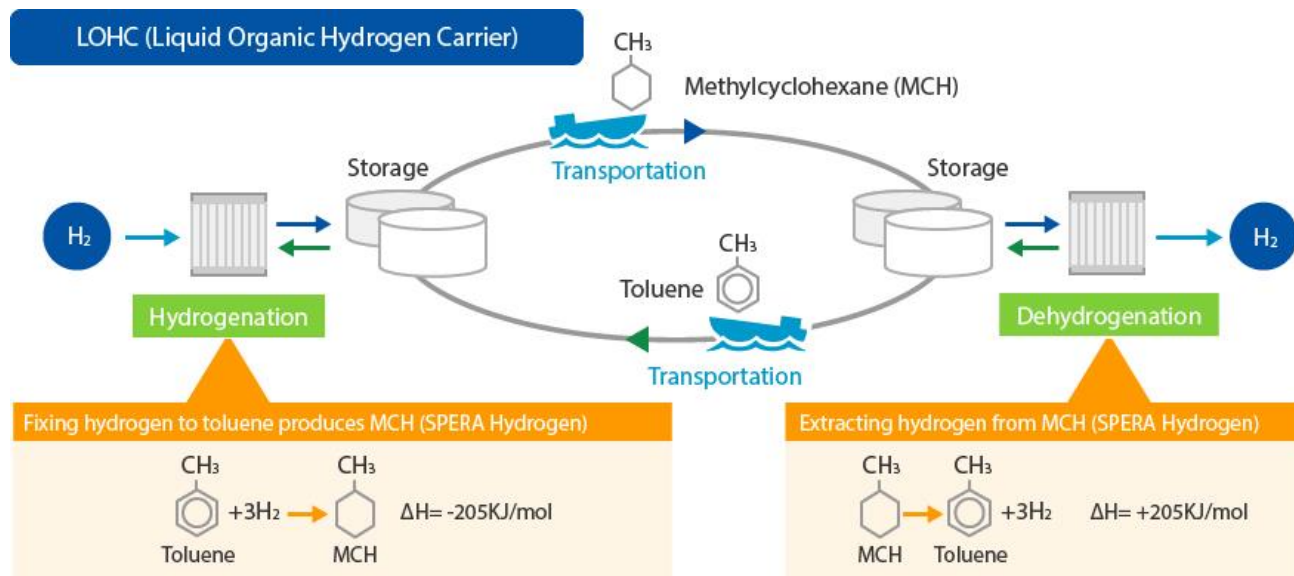
Chiyoda is confident that this study, aiming to build an international hydrogen supply chain, will contribute to the decarbonization path of Europe, supporting the global drive towards a sustainable future.

^{*1} MCH

A liquid produced from toluene and hydrogen that can be handled in a liquid state at ambient temperature and pressure. It is widely used in many fields and products, including as a solvent for correction fluids.

<Chiyoda's SPERA Hydrogen System>

Please refer to [our website](#) for details.



<Reference Information>

1. About Chiyoda

- I. Headquarters: 4-6-2, Minatomirai, Nishi-ku, Yokohama, Japan
- II. Main Business: Integrated engineering including consulting, planning, engineering, procurement, construction, commissioning and maintenance for facilities related to gas, electricity, petroleum, petrochemical, chemical, pharmaceutical, antipollution, environment, preservation and other services. Mineral resource exploration and investment, including oil and gas, and financing such activities.
- III. Representative: Mr. Masaji Santo, President & COO

2. About Port of Rotterdam Authority

- I. Headquarters: Rotterdam, The Netherlands
- II. Main Business: Development, construction, management and operation of the port and industrial area in Rotterdam.
- III. Representative: Mr. Allard Castelein, President and CEO

3. About Koole Terminals

- I. Headquarters: The Netherlands
- II. Main Business: International storage, transportation and handling of vegetable oils and fats, oleochemicals, waxes, biodiesel, base oils, chemicals, minerals etc.
- III. Representative: Mr. John Kraakman, CEO

4. About Mitsubishi Corporation

- I. Headquarters: 3-1 Marunouchi 2-chome, Chiyoda-ku, Tokyo, Japan
- II. Main Business: Globally integrated enterprise comprised of ten (10) Business Groups: Natural Gas, Industrial Materials, Petroleum & Chemicals, Mineral Resources, Industrial Infrastructure, Automotive & Mobility, Food Industry, Consumer Industry, Power Solutions and Urban Development
- III. Representative: Mr. Takehiko Kakiuchi, President and CEO

[Please click here for joint press release by the 4 companies](#)

For further information, please contact:

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IR, PR & CSR Section

URL: <https://www.chiyodacorp.com/en/contact/index.php>