

4 October, 2021

**Strategic Partnership with Sembcorp Industries and Mitsubishi Corporation
to develop a Hydrogen Supply Chain utilizing SPERA Hydrogen™**

Chiyoda Corporation (Chiyoda) is pleased to announce that it signed a Memorandum of Understanding (MOU) on 4 October 2021 with Sembcorp Industries (Sembcorp) through its subsidiary and Mitsubishi Corporation (Mitsubishi) to explore the feasibility and implementation of a commercial-scale supply chain to deliver decarbonized hydrogen to Singapore, utilizing Chiyoda's proven hydrogen storage and transportation technology 'SPERA Hydrogen'.

In March 2020, Chiyoda entered into an MOU with Mitsubishi and five private companies in Singapore, including Sembcorp, and in collaboration with the Singaporean government, commenced discussions on the potential of importing and utilizing hydrogen in Singapore. Chiyoda also studied findings from the Singaporean government's Long-Term Low Emissions Development Strategy^{*1} released in April 2020.

The MOU will deepen collaborative discussions and studies on decarbonizing Sembcorp's businesses both domestically and abroad, utilizing the hydrogen value chain.

In May, 2021, the Japanese Government announced the Asia Energy Transition Initiative (AETI) that aims to support the achievement of sustainable economic growth and carbon neutrality in Asia, and the governments of Japan and Singapore have commenced dialogue on energy transition. Under the AETI, Japan will support Singapore's energy transition leveraged by Japanese companies' technology, such as Chiyoda's "SPERA Hydrogen™" and commercialization thereof.

SPERA Hydrogen is a technology that utilizes methylcyclohexane^{*2} (MCH) as a hydrogen carrier and Chiyoda's proprietary dehydrogenation catalysts to transport and store hydrogen.

MCH is a chemically stable liquid at ambient temperature and pressure, easy to handle and maximizes the advantages of using existing petrochemical infrastructure, regulations and standards. Parties in Singapore favor MCH as the hydrogen carrier because of its safety record and cost competitiveness, intensified by using existing infrastructure.

Chiyoda is implementing 'Chiyoda's Revitalization Plan - Initiatives for Revitalization and the Future', released in May 2019, and the 'Revitalization Plan Update', released in May 2021. The strategic collaboration with Sembcorp and Mitsubishi will be a significant milestone to defining "new values" in engineering; visions highlighted in the two documents.

Chiyoda will further accelerate the expansion of its hydrogen value chain business towards energy transformation, contributing to a long-term CO2 emission reduction in Singapore and global decarbonization towards a sustainable future environment.

<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.
- III. Representative: Mr. Masaji Santo, President & COO

2. 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 & CEO

3. About Sembcorp Industries

- I. Headquarters: 30 Hill Street #05-04, Singapore 179360, Singapore
- II. Main Business: A leading Pan-Asian energy and urban solutions provider and one of Singapore's largest homegrown renewable energy players with more than 3,300 megawatts (MW) of renewable energy capacity globally. For more information, please visit www.sembcorp.com.
- III. Representative: Mr. Wong Kim Yin, Group President & CEO

*1 [Singapore's Long-Term Low-Emissions Development Strategy \(PDF, 15MB\)](#)

*2 methylcyclohexane

A liquid produced from toluene and hydrogen that can be handled in a liquid state at ambient temperature and pressure. It is widely used as a pharmaceutical agent, solvent for agrichemical production, admixture for jet-fuel, and solvent for correction liquid, etc.

[Please click here for the joint press release by the 3 companies](#)

For further information, please contact:

Chiyoda Corporation

IR, PR & CSR Section

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