

NTU to work with partners to explore hydrogen-storage solutions

© TUE, MAR 29, 2022 - 8:04 PM

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NTU will work with Japan's Chiyoda Corporation and mainboard-listed Sembcorp Industries, among others, to extract hydrogen from liquid organic hydrogen carriers, which are flexible media for storing and transporting renewable energy. PHOTO: NTU

NANYANG Technological University (NTU) and its partners have come together to develop new ways to store and transport hydrogen, and in so doing, power Singapore farther along in its drive for a green-energy future.

The university will work with Japan's Chiyoda Corporation and mainboard-listed Sembcorp Industries **Sembcorp Ind : U96 -1.1%**, among others, to extract hydrogen from liquid organic hydrogen carriers, which are flexible media for storing and transporting renewable energy. Researchers from the National University of Singapore will also be involved in the project.

Hydrogen, which produces near-zero greenhouse gas emissions when used in fuel cells to provide electricity, has long been considered as an important piece of the puzzle in achieving net-zero emissions.

The project could thus pave the way for a more efficient and economical means to transport hydrogen, NTU said in a statement on Tuesday (Mar 29).

It could also contribute to the expansion of global hydrogen supply chains.

Chiyoda, which is listed on the Tokyo Stock Exchange, is NTU's key partner in the project. The construction engineering company will offer its proprietary dehydrogenation catalyst technology, called Spera Hydrogen, to the university to be developed and implemented on a national scale, NTU said.

Apart from Chiyoda and Sembcorp, the university's other collaborators include PSA Corporation, City Energy, Jurong Port, Singapore LNG corporation and Mitsubishi Corporation.

The consortium is aiming to accelerate the commercial usage of hydrogen in Singapore, with a goal of semi-commercialising the technology by the year 2025, and fully commercialising it by 2030, NTU added.

The collaboration is supported by a grant awarded under the government's Low-Carbon Energy Research Funding Initiative, which supports research, development and demonstration projects on low-carbon energy technology solutions.

Professor Lam Khin Yong, senior vice-president of research at NTU, said the university's researchers will work with the partners to develop better catalysts, and more efficient reactors for extracting hydrogen.

"This collaboration comes at a timely moment, on the back of rising oil prices. As a nation with no natural resources, it is all the more important for Singapore to have an alternative source of energy that is reliable and economical," he added.

The head of Sembcorp's group centre of excellence Hong Howe Yong said that, as Singapore's top natural gas importer, Sembcorp is "committed and well-placed" to support the country's move towards greener technology.

Chiyoda's president and chief operating officer Masaji Santo said he believes the programme will lead to the long-term lowering of carbon dioxide emissions in Singapore and globally as well.

Under it, Chiyoda will accelerate the expansion of its hydrogen value chain business towards a sustainable future environment by maximising the advantages of its Spera Hydrogen system, including its cost competitiveness, he said.