



Chiyoda's Low Carbon Technology and Engineering

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Who we are?

Chiyoda's Profile

Chiyoda Group is committed to being an "Innovative" Engineering Company, shaping the future of energy and the global environment with passion and cutting-edge technology.

Established in **1948**

Project Execution >60 countries

Revenue^{**} 457 M JPY Employees^{*} 3,496



*as of Mar/2024 **as of Mar/2025



Chiyoda's Expertise in Hydrogen Business

We are able to provide technical support for each area of the hydrogen supply chain: Production, Transport/Storage, and Utilization.



Hydrogen Carrier

Hydrogen Carriers Landscape

Each hydrogen carrier has its own advantages and disadvantages, as well as differences in the time required to establish the necessary technology. It is expected that they will coexist based on the conditions required by end-users.



LOHC-MCH : Technology at glance

LOHC-MCH, which is a feature of a circular supply chain, is expected to be used in various situations as a key to a decarbonized society, such as storage, transportation, and distributed use in the hydrogen supply chain.



*TOL: Toluene





Transport/ Storage: LOHC-MCH Global H2 Supply Chain Demonstration

Global Supply Chain Demonstration Project @2020

In December 2020, AHEAD successfully completed the world's first 'Global Hydrogen Supply Chain Demonstration Project', an important milestone for the construction of an international hydrogen supply chain.



* AHEAD: Advanced Hydrogen Energy Chain Association for Technology Development (Chiyoda, Mitsubishi Corporation, Mitsui & Co., Nippon Yusen Kabushiki Kaisha)



Use: Demonstration Project in Singapore

Distributed Use Demonstration in Singapore

Dehydrogenation Demo Plant Capacity:

Max. raw H_2 production rate of **40** Nm³/h Purity of $H_2 > 99.97$ % (i.e. ISO14687-2(2012) Grade D) with Pressure Swing Adsorption Approx. one year (24/7) operation Prime Mover capacity : 30kg-H2/Vehicle











Production:

Electrolysis System with TOYOTA

Water Electrolyzer with TOYOTA

February 2024: Signed an MOU with the aim of establishing a strategic partnership for manufacturing, sales, etc. including joint development.



Synergies of Joint Development

- i. Supply capacity for the rapidly growing hydrogen market
- ii. Resolution of issues with existing technologies and products
- iii. Global competitiveness



Our Contribution towards clean future

For the development of a hydrogen project

The key is to work together to create a mature business environment through collaboration between the public and private sectors. We will support project realization by providing reliable CAPEX calculation and feasibility studies based on our experience.

[Japanese Government]

Promotion of AZEC to create cooperative frameworks

[Private Sector]

Capital investment and **introduction of new technologies**

[Public Sectors in ASEAN]

Legal systems/ policy for the hydrogen energy



Technical perspectives

Feasibility

Business

Opportunities

Maturing





Thank you!



