



P R E S S R E L E A S E

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Mitsubishi Fuso and Iwatani Corporation sign MOU to study subcooled liquid hydrogen (sLH2) refueling technology

- Iwatani and MFTBC are studying subcooled liquid hydrogen (sLH2) refueling technology
- Compared to gaseous hydrogen, sLH2 allows for higher storage density, greater range, faster refueling, lower costs and superior energy efficiency
- The study will cover technical, regulatory and commercial aspects

Mitsubishi Fuso Truck and Bus Corporation (Headquarters: Kawasaki City, Kanagawa Prefecture, President and CEO: Karl Deppen, hereafter “MFTBC”) and Iwatani Corporation (Head Office: Tokyo and Osaka, President: Hiroshi Majima; hereafter “Iwatani”) have signed a Memorandum of Understanding (MoU) on the study of liquid hydrogen refueling technology for hydrogen-fueled commercial vehicles.

Both companies are studying the use of subcooled liquid hydrogen (sLH2) refueling technology. Compared to gaseous hydrogen, the sLH2 technology allows for higher storage density, greater range, faster refueling, lower costs and superior energy efficiency. Iwatani and MFTBC will study technical, commercial and regulatory aspects of the sLH2 technology, and are now working to realize sLH2 technology in Japan.

■ Collaboration Overview:

- Technical collaboration for liquid hydrogen refueling
- Investigation of regulations and certification for liquid hydrogen
- Study of business conditions for filling infrastructure
- Marketing activities related to hydrogen-fueled vehicles and filling infrastructure

Hydrogen is seen as an important enabler for achieving carbon-neutral transportation, especially in commercial vehicle applications with heavy loads and long distances. Traditionally, hydrogen has been stored on-board the vehicle as compressed gas.

■ About sLH2

The sLH2 refueling process uses a pump to slightly increase the pressure of the liquid hydrogen, making it subcooled. Due to this pressure, the boil-off gas in the vehicle tank is re-liquified, eliminating the need to discharge the boil-off gas. The sLH2 process reduces and simplifies the equipment of the fueling station, thereby reducing investment costs. It also requires significantly less energy which reduces the operational cost of the fueling station.

The sLH2 refueling process was originally developed by Daimler Truck and Linde Engineering and is currently being discussed by the relevant parties with a view to developing ISO standardization.

■ About Daimler Truck’s sLH2 project

Daimler Truck, the parent company of MFTBC, has signaled its position that hydrogen-powered vehicles could be a better solution, particularly for very flexible deployments in heavy loads and long

distances under demanding conditions, than battery-powered EVs. The company has already developed the Mercedes-Benz GenH2 Truck, a fuel cell heavy-duty prototype that uses liquid hydrogen, and began customer trials of this truck in 2024. Daimler Truck also produces fuel cell systems for heavy-duty trucks through its joint venture with the Volvo Group, cellcentric. The sLH2 technology was introduced with the GenH2 Truck for customer trials in 2024. When using the sLH2 technology to refuel hydrogen, much of the equipment normally required when using compressed hydrogen gas can be omitted, significantly reducing the equipment cost, required space and consumed energy impact of hydrogen stations.

MFTBC aims to be a pioneer of advanced technologies through research and development to envision a sustainable future. The company's hydrogen activities are based around three interdependent pillars; 'Product, Customer and Infrastructure', which are essential to realizing a sustainable future with hydrogen technologies. In the collaboration with Iwatani, MFTBC will work on the "Infrastructure" pillar and promote research and development on liquid hydrogen.

Iwatani Corporation

Based on our corporate philosophy – "Become a person needed by society, as those needed by society can prosper" – we deliver a diverse range of gases and energy to power industry as well as people's daily lives. As the number one supplier of hydrogen in Japan, we are working to establish a CO2-free hydrogen supply chain. Toward the goal of achieving carbon neutrality by 2050, we promote domestic hydrogen projects, including the establishment of a commercial hydrogen supply chain through the Green Innovation Fund.

MFTBC at a Glance

Mitsubishi Fuso Truck and Bus Corporation (MFTBC) is a commercial vehicle manufacturer based in Kawasaki City, Japan. 89.29% of its shares are owned by Daimler Truck AG and 10.71% by various Mitsubishi group companies. MFTBC provides trucks, buses and industrial engines under the FUSO brand with a longstanding history of over 90 years, serving approximately 170 markets worldwide. MFTBC proactively develops cutting-edge technologies such as electrification, with its eCanter being Japan's first mass-produced electric light-duty truck. MFTBC's heavy-duty Super Great Truck was also the first of its kind in Japan to include SAE Level 2-equivalent automated driving support technology, now a benchmark in the Japanese commercial vehicle market.