Liquid Green Hydrogen

Powering the Future of Mass Transit and Long-Haul Trucking.



As the world grapples with climate change and the urgent need for sustainable transportation solutions, hydrogen has emerged as a promising alternative to fossil fuels. Among the various forms of hydrogen, liquid green hydrogen stands out as a particularly attractive option for powering mass transit and long-haul trucking.

The Promise of Liquid Green Hydrogen

Liquid green hydrogen, produced using renewable energy sources like solar and wind power, offers several advantages over traditional fossil fuels. It is a zero-emission fuel, meaning that it produces only water vapor and no harmful pollutants. Hydrogen also has a high energy density, allowing vehicles to travel long distances without refueling.

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Addressing the Needs of Mass Transit and Long-Haul Trucking

The adoption of liquid green hydrogen in the mass transit and trucking sectors could have significant economic benefits. For mass transit, switching to hydrogen fuel cells could reduce fuel costs as compared to batteries. This would lead to lower operating costs for transit agencies, which could be passed on to riders in the form of reduced fares.

For long-haul trucking, liquid hydrogen is a cost-effective storage solution for fueling stations. The trucks themselves, would be filled with compressed hydrogen gas. This savings could be passed on to consumers in the form of lower shipping costs.

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The Need for Portable Refueling Solutions

To fully realize the potential of liquid green hydrogen in these sectors, a critical infrastructure element is needed – portable refueling stations. These stations would allow for the convenient and efficient refueling of hydrogen-powered vehicles at various locations, including refueling depots, terminals, and even remote areas.

A portable hydrogen refueling station is a self-contained unit that can be transported to various locations to refuel hydrogen-powered vehicles. These stations typically consist of a storage tank for liquid hydrogen, heating and pressurizing equipment to convert the liquid hydrogen to gaseous hydrogen, and a dispensing system to refuel vehicles. Portable hydrogen refueling stations are a key enabler of the adoption of hydrogen fuel cell vehicles , as they can provide refueling infrastructure in areas where traditional stationary stations are not feasible.

Portable Refueling Trailers: A Game-Changer

Plug's HL-1000D-P Cryogenic Dispensing Trailer emerges as a game-changer. This trailer offers mobile delivery, portable storage, and convenient refueling of gaseous hydrogen-powered vehicles. The Portable refueler is named after the max amount of hydrogen it is likely to dispense each day. It can deliver 1,000 kg per day. The tank holds 1500 kg, so it can be used to fuel vehicles for multiple days or serve high-demand for many vehicles before being refilled.

Simplifying Hydrogen Fueling and Infrastructure Requirements

The HL-1000D-P simplifies the deployment of hydrogen fuel cell technology by eliminating the need for costly and time-consuming stationary infrastructure. It brings hydrogen fueling to the point of use, significantly reducing the need for traditional stationary hydrogen fueling stations.

The Path to a Clean Energy Future

Liquid green hydrogen, coupled with portable refueling solutions like the HL-1000D-P, holds immense potential to transform mass transit and long-haul trucking, paving the way for a cleaner and more sustainable transportation future. As the technology continues to mature and costs decrease, we can expect to see an increasing adoption of liquid green hydrogen in these sectors, contributing to a significant reduction in greenhouse gas emissions and a healthier environment for all.



The Plug HL-1000D-P

Plug is the industry leader in portable cryogenic storage, vaporization, and turnkey system capability. New to the market, The HL-1000D-P revolutionizes material handling, E-mobility, and stationary power applications.

Innovation for Easy Hydrogen Adoption

The HL-1000D-P cryogenic dispensing trailer offers mobile delivery and portable storage of liquid hydrogen, featuring integral dispensing for convenient refueling of gaseous hydrogen powered vehicles — all on a single trailer. With the HL-1000D-P, deploying FCEV and H2 combustion solutions becomes simpler, infrastructure requirements are minimized, and the overall cost of hydrogen is reduced.

Speed to market

The HL-1000D-P revolutionizes hydrogen mobility by addressing key challenges and expediting the transition to hydrogen energy. It not only facilitates the widespread adoption of FCEVs and fleet conversions, but also significantly shortens project timelines.

High Storage Capacity

The HL-1000D-P differentiates itself from traditional gaseous fueling or delivery assets through its liquid supply, enabling the storage and transportation of higher payloads compared to compressed gas mobile equipment. This product family is equipped with all-electric drives and utilizes ambient air for vaporization, ensuring zero-emission operation.

High Fueling Capacity

The HL-1000D-P is a high-performance option for long-haul trucking, bus fueling, and other vehicle fueling applications. With an impressive 350 or 700 bar fast fueling capability, over 1,500 kg portable liquid storage capacity or delivery payload, and the unique ability to dispense fuel directly into vehicles, it offers exceptional functionality.

Reduced Infrastructure Costs

The HL-1000D-P helps avoid fixed storage infrastructure costs by offering a portable solution for refueling, as well as a mobile solution to recharge gaseous storage and fulfill your liquid hydrogen delivery needs.

Product specifications	HL-1000D-P
Performance	
Product Service:	Liquid Hydrogen
MAWP:	110 psig (7.59 barg)
Dot Max. Operating Pressure:	121 psig (8.34 barg)
Design Temp:	-423°F to 150°F (-252.8°C to 65.5°C)
Maximum Permissible Weight of Liquid (17 PSIG Fill density):	3,500 lb (1,588 kg)
Warm Capacity:	6, 459 USG
Cold Capacity at Vent:	6,367 USG
Rated Fueling Capacity:	3.6 kg/min (216 kg/hr)
Tare Weight (Tank Only)	16,000lb (7,258 kg) (+/-3%)
Normal Evaporation Rate (NER):	0.73% / day
Physical	
Length:	53 ft (16.15 m)
Width:	102 in (2.60 m)
Height:	152.5 in (3.87 m)
Other	
Vessel Design Codes:	ASME SEC VIII, DIV 1, 49CFR 178.338 (MC-338), Compliant with CA 40 ft KPRA
Ancillary Design Codes:	ASME B31.12, NEC, NFPA 2, NFPA 55