Hydrogen Truck Market by Vehicle Type, Fuel Cell Technology, Motor Power(Upto 200 Kw, 200-400 Kw, Above 400 Kw), Range(Upto 300 miles, 300-500 miles, Above 500 miles), Tank Size, Type of Hydrogen Tank, and Region - Global Forecast to 2035

Market Report | 2024-09-10 | 342 pages | MarketsandMarkets

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Report description:

The global hydrogen truck market is projected to grow from USD 1.9 billion in 2024 to USD 10.8 billion in 2035, at a CAGR of 16.9%.

Hydrogen trucks presents a significant opportunity for transportation fleet owners to achieve zero-emission transportation with similar operational benefits from conventional diesel vehicles. Government plans and initiatives for hydrogen infrastructure and production, deployment of hydrogen trucks, implementation of fleet decarbonization mandates and rapid setup of hydrogen technology R&D centers in the region due to lower cost are the factors driving the demand for hydrogen trucks. Also, lower TCO of hydrogen trucks as compared to ICE and Battery-electric trucks is increasing the demand for hydrogen truck market.

"30-60 kg segment is expected to hold a significant share of hydrogen truck market during the forecast period."

A medium-sized hydrogen fuel tank that stores between 30 and 60 kilograms of hydrogen are commonly used in standard medium-length buses and medium-duty trucks. They offer a balance between range and payload capacity, making them suitable for a wide variety of transportation needs, including daily commutes and long- distance travel. These tanks are generally used for intercity/transit applications in buses. 30-60 kg tank is preferred over <30kg and >60 kg tank due to its operational efficiency and less refueling time, making it an ideal solution for long-haul transportation. Leading OEMs such as Solaris, Hyundai Motor Company, Foton International, Van Hool, and Mercedes Benz, among others, provide models such as Foton BJ6123FCEVCH, Hyundai UNIVERSE Fuel Cell, Hyundai ELEC CITY Fuel Cell, eCitaro fuel cell, hydrogen buses with fuel tank capacities of 30-60 kg. Trucks usually use these tanks for refuse services as well as long-haul transportation. OEMs such as HYZON Motors, Hyundai Motor Company, Foton International, and Nikola, among others, provide models such as Hymax 24t, Xcient FC, Nikola Tre, HYMAX-500 and QUANTRON FCEV EU Heavy Truck, among others with fuel tank capacity of 30-60 kg.

"200-400 kw to lead the market for hydrogen buses and truck, by motor power"

The 200-400 kW segment has a wide range of applications, including regular city buses and articulated buses utilized on mixed urban and suburban routes and medium-duty trucks that demand more power and speed. Also, 200-400 kW is more prevalent in Transit buses due to its balance between power output and vehicle range.

Hydrogen trucks in North America generally include motors which vary from 200 kW to 400 kW. California transit companies, such as AC Transit and SunLine Transit, are in their early stages of hydrogen bus deployment due to state zero-emission transportation applications. The high cost of hydrogen generation, limited refueling infrastructure, and the necessity for more technology advancements are significant barriers. Leading automakers in Europe, like Solaris and IVECO s.p.a., have started operating hydrogen transit buses in the region. Solaris, for example, delivered 200 hydrogen buses to about 24 European cities in December 2023 and secured additional pre-orders for 600 hydrogen-powered vehicles between 2024 and 2026.

"North America is expected to have significant growth during the forecast period."

North America has been one of the leading regions in terms of manufacturing of hydrogen vehicles with the help of renowned fuel cell component providers in the US and Canada such as Ballard Power (Canada), Plug Power (US), and Fuel Cell Energy (US). US and Canada have been supporting the growth of FCEVs, especially in the commercial vehicle sector. The governments have supported performance testing for hydrogen vehicles for interstate logistics and buses. The presence of companies like Ballard Power Systems, Hyster-Yale, Plug Power, Cummins, Advent Technologies Holdings, BorgWarner, among others makes the North American market more competitive. Transit agencies in the North America are increasingly adopting hydrogen buses by local OEMs, such as NFI and First Hydrogen, due to their longer operational range, and quick refueling times across diverse climates. Unlike electric buses, which have longer charging times and infrastructure prerequisites, hydrogen buses offer a more scalable and viable solution. Every hydrogen bus deployed in the US could reduce the carbon released into the atmosphere by 100 tons annually and eliminate the need for 9,000 gallons of fuel every year over the vehicle's life. Compared to ICE Buses, that translates into more than USD 37,000 per year per vehicle savings.

In-depth interviews were conducted with CEOs, marketing directors, other innovation and technology directors, and executives from various key organizations operating in this market.

-□By Company Type: OEMs - 24%, Tier I - 67%, and Tier II & III- 9%,

-□By Designation: C- Level Executives - 33%, Directors - 52%, and Others - 15%

-□By Region: North America - 26%, Europe - 36%, and Asia Pacific - 38%

The hydrogen truck market is dominated by major players including Foton International (China), Yutong Bus Co., Ltd. (China), Xiamen King Long International Trading Co., Ltd. (China), Solaris Bus & Coach sp. z o.o. (Poland), and Hyundai Motor Company (South Korea). These companies are expanding their operations in green hydrogen infrastructure to strengthen their hydrogen ecosystem.

Research Coverage:

The report covers the hydrogen truck market, in terms of Vehicle Type (Hydrogen Bus, Hydrogen Truck), Fuel Cell Technology (PEMFC, SOFC), Motor Power (Less Than 200 KW, 200 - 400 KW, Above 400 KW), Range (Upto 300 Miles, Between 300 - 500 Miles, Above 500 Miles), Tank Size(<30 kg, 30-60 kg, >60 kg), Type of Hydrogen Tank (Type III, Type IV), and Region (Asia Pacific, Europe, and North America). It covers the competitive landscape and company profiles of the major players in the hydrogen truck market ecosystem.

The study also includes an in-depth competitive analysis of the key market players, along with their company profiles, key observations related to product and business offerings, recent developments, and key market strategies.

Key Benefits of Buying the Report:

-□The report will help market leaders/new entrants with information on the closest approximations of revenue and volume numbers for the overall hydrogen truck market and its subsegments.

-□This report will help stakeholders understand the competitive landscape and gain more insights to position their businesses better and plan suitable go-to-market strategies.

-□The report also helps stakeholders understand the market pulse and provides information on key market drivers, restraints, challenges, and opportunities.

-□The report also helps stakeholders understand the current and future pricing trends of hydrogen buses and trucks.

The report provides insight on the following pointers:

-Analysis of key drivers (Fleet Decarbonization Mandates, Faster refueling compared to EVs, Expansion of Hydrogen Refueling Infrastructure, Growing investment in Green Hydrogen production), restraints (High Initial Investment in Hydrogen Refueling Infrastructure, Infrastructure Scalability Issues, Issue with high flammability and detection of fuel leakages), opportunities (Advancements in Fuel Cell Technology, Integration with Renewable Energy Sources, Hydrogen Corridors, Government initiatives promoting hydrogen infrastructure, Development of portable hydrogen refueling stations), and challenges (High Vehicle Cost compared to gasoline/EVs, Hydrogen Storage & Transportation Challenges, Higher operating cost compared to EVs).
-Product Development/Innovation: Detailed insights on upcoming technologies, research & development activities, and new product & service launches in the hydrogen bus and truck market.
-Market Development: Comprehensive information about lucrative markets - the report analyses the hydrogen truck market across varied regions.
-Market Diversification: Exhaustive information about new products & services, untapped geographies, recent developments, and investments in the hydrogen truck market.
-Competitive Assessment: In-depth assessment of market ranking, growth strategies, and service offerings of leading players like Foton International (China), Yutong Bus Co., Ltd. (China), Xiamen King Long International Trading Co., Ltd. (China), Solaris Bus & Coach sp. z o.o. (Poland), and Hyundai Motor Company (South Korea) among others in hydrogen truck market.

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