

Future of Hydrogen in Automotive Market by Vehicle Type (Passenger Car, Light Commercial Vehicle, Bus, and Truck), Propulsion Type (FCEV, FCHEV, and H2-ICEV), H2 Refueling Points (Asia Pacific, Europe, and North America) and Region - Global Forecast 2035

<https://marketpublishers.com/r/F897EB516E59EN.html>

Date: April 2024

Pages: 38

Price: US\$ 10,000.00 (Single User License)

ID: F897EB516E59EN

Abstracts

The global future of hydrogen in automotive market size is projected to grow from 23 thousand units in 2024 to 353 thousand units by 2035, at a CAGR of 28.3%.

The increasing emission levels, rising fuel prices, and limited availability of fossil fuels have spurred a burgeoning demand for zero-emission alternative fuel vehicles in recent years. This surge has notably contributed to the increasing interest in hydrogen mobility. Advancements in alternative technologies, including non-precious metal catalyst-based Proton Exchange Membrane Fuel Cells (PEM FC), hydrogen fuel-cell packaged system modules, and compact, lightweight microstructures, are expected to enhance vehicle range, decrease costs, and augment overall efficiency. Similarly, advancements in powertrain technology are expected to unveil fresh avenues within the hydrogen-fuel vehicle market. Additionally, the emergence of novel hydrogen-based applications such as Fuel Cell Hybrid Electric Vehicles (FCHEVs) and Hydrogen Internal Combustion Engine Vehicles (H2-ICEVs) is set to generate new prospects within the market landscape. Further, growing focus on hydrogen infrastructure with supportive government efforts, as well as the development of charging stations, are some of the factors that will significantly contribute to market growth during the forecast period.

“H2-Fuel station segment is expected to lead by Asia Pacific region .”

The H2 fuel station segment is expected to lead the Asia Pacific region, projecting over 14 thousand fuel stations by the year 2035. China currently leads this segment,

demonstrating rapid establishment of H2 fuel stations nationwide, with over 400 refueling stations operational as of January 2024. Similarly, Japan has outlined plans to establish 320 hydrogen stations by 2025. These initiatives by respective governments are anticipated to boost hydrogen in the automotive market within the region.

“Passenger car segment expected to grow at significant rate during the forecast period by Vehicle type”

The passenger car segment is projected to demonstrate a growth rate, of CAGR 49.4% during the forecast period, reaching an estimated 264 thousand units by the year 2035. Within Europe, the passenger car segment retained its dominance, commanding 80% of the market share. Esteemed EV manufacturers such as BMW, KIA, and Hyundai are expected to establish their presence in the hydrogen fuel cell passenger car market by the end of 2024. Some of the best-selling FCEV passenger car models include Toyota Mirai and Hyundai NEXO.

“Europe expected to be the fastest growing market during the forecast period.”

Europe is expected to emerge as the fastest-growing market for FCEVs with new hydrogen plans announced by the EU to set up H2-fueling stations every 200km. Further supportive policies by the government are expected to bolster the market. For instance, the UK had announced plans for 4,000 fuel-cell buses by 2025. FCEV demand in Europe is mainly led by Germany, France, the Netherlands, and Switzerland. LCVs are the fastest-growing market in the region. Similarly, Toyota Motor Corporation (Japan) has been leading the European FCEV market.

In-depth interviews were conducted with CEOs, managers, and executives from various key organizations operating in this market.

By Respondent Type – OEMs – 24% , Tier I – 67% , Tier II & III – 9%

By Designation – C- level Executives – 33% , Managers – 52% , Executives – 15%

By Region – North America – 28%, Asia Pacific – 38%, Europe – 34%

The future of hydrogen in automotive market is dominated by established players such as Toyota Motor Corporation (Japan), Hyundai Motor Company (South Korea), SAIC

Motors (China), FAW (China), and Yutong (China) among others. These companies manufacture fuel cell cars, buses, trucks, and LCVs with features such as higher range, and better fuel efficiency compared to ICE vehicles. Additionally, These companies have set up R&D facilities to develop best-in-class products as an alternative to EVs.

Research Coverage:

The report covers the future of hydrogen in automotive market, in terms of vehicle type (Passenger Cars , LCV,Bus, Truck), H2 fuel station (Asia Pacific, Europe, and North America), propulsion (FCEV, FCHEV, and H2-ICE), and region (Asia Oceania, Europe, and North America). It also covers the competitive landscape and company profiles of the major players in the future of hydrogen in automotive market ecosystem.

Key Benefits of the Report

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

The report will help the market leaders/new entrants in this market with information on the closest approximations of the revenue numbers for the overall future of hydrogen in automotive market and the 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 pulse of the market and provides them with information on key market drivers, restraints, challenges, and opportunities.

The report provides insights on the following pointers:

Analysis of key drivers (better fuel efficiency and increased driving range, rapid increase in investment and development for green hydrogen production, fast refuelling, reduced Oil dependency, lower emissions compared to other vehicles), restraints (highly flammable, hard to detect hydrogen leakage, high

initial investment or hydrogen refuelling infrastructure, lower efficiency compared to BEV's and HEVs), challenges (rising demand for fuel cell vehicles in automotive and transportation sector, fuel cell vans to be an emerging opportunity for OEMs, government initiatives pertaining to hydrogen infrastructure), and opportunities (high vehicle costs, insufficient hydrogen infrastructure, fast growing demand for BEVS and HEVs), influencing the growth of the authentication and brand protection market.

Product Development/Innovation: Detailed insights on upcoming technologies, research & development activities, and new product & service launches in the automotive fuel cell market.

Market Development: Comprehensive information about lucrative markets - the report analyses the future of hydrogen in automotive market across varied regions.

Market Diversification: Exhaustive information about new products & services, untapped geographies, recent developments, and investments in the future of hydrogen in automotive market.

Competitive Assessment: In-depth assessment of market ranking, growth strategies, and service offerings of leading players Toyota Motor Corporation (Japan), Hyundai Motor Company (South Korea), SAIC Motors (China), FAW (china), and Yutong (China) among others in future of hydrogen in automotive market.

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