

Fuel Cell UAV Market to Witness Exponential Growth by 2032 - Boeing, Horizon Fuel Cell Technologies

The global fuel cell UAV market is expected to witness significant growth, owing to the growth in the adoption of the smart technology in agricultural, mining



Cargo UAV, and Others), Type (Fixed Wing, Rotary Wing, and Hybrid), Weight (Less Than 50 Kg and More Than 50 Kg), and Application (Military & Defense, Civil & Commercial, Logistics & Transportation, Construction & Mining, and Others): Global Opportunity Analysis and Industry Forecast, 2023–2032".

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The growth of the global fuel cell UAV market is driven by factors such as rise in demand for improved surveillance, increase in need for higher payload capacity UAVs"

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The global fuel cell UAV market size was valued at \$1.6 billion in 2022, and is projected to reach \$5.4 billion by 2032, growing at a CAGR of 13.4% from 2023 to 2032.

The concept of fuel cell UAVs is typically attributed to the transportation options that use propulsion technology,

which does not produce internal combustion engine exhaust or other carbon emissions when it operates. It is primarily designed to replace conventional means of travel as they lead to environmental pollution. The fuel cell UAVs are electrochemical devices that convert chemical energy from fuels & oxidizers, without combustion, into useful electrical energy that is used to power devices and vehicles. Recently, fuel cell UAVs have emerged as a viable alternative fuel to replace the conventional UAVs using gasoline or jet fuel for their operations, which are gradually depleting globally.

Plug Power Inc., Elbit Systems Ltd., Textron Inc., Boeing, AeroVironment Inc., Northrop Grumman, Horizon Fuel Cell Technologies, Barnard Microsystems Ltd., ISS Aerospace, EnergyOR Technologies

The growth of the global fuel cell UAV market is driven by factors such as rise in demand for improved surveillance, increase in need for higher payload capacity UAVs, and supportive growth through regulatory compliance. However, increase in security issues and cyber threat and high cost of fuel cells for UAV solutions hamper the growth of the market. On the contrary, technological advancements in military applications and surge in public-private partnerships to offer remunerative opportunities for the expansion of the fuel cell UAV market during the forecast period.

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Military agencies are key consumers of fuel cell UAV solutions & related services. The procurement activities of these fuel cell UAV solutions are planned by considering the budget allocations and security severity. The commencement of fuel cell UAV solutions is expected to be done through long-term agreements and contracts between the defense department and solution suppliers of unmanned aerial vehicle (UAV) solutions. The contracts outline a series of criteria that need to be fulfilled within a specific timeframe, as the solutions are customized products tailored to the needs of the end user. These agreements present potential long-term business prospects with military organizations.

Furthermore, unmanned aerial vehicles enable cost-effective distribution expanses, effective reach that are difficult to access, and operational effective inventory management. The growing adoption of smart technology in the logistics and transportation front is expected to drive the growth of UAV for logistics and transportation application.

On the basis of type, the rotary wing held the highest market share in 2022, accounting for nearly three-fifths of the global <u>fuel cell UAV market revenue</u> and is anticipated to maintain its leadership status throughout the forecast period as the prominent companies in this market include SZ DJI Technology Co., 3D Robotics, Inc., Parrot SA, Yuneec International Co. Ltd., and others. These companies are offering highly advanced products to customers to meet their professional business needs. Moreover, the hybrid segment is projected to manifest the highest CAGR of 15.0% from 2023 to 2032, as deployment of hybrid UAVs enables various advantages such as reduced operational footprint, ease of portability, reduced initial system and ongoing

operational costs.

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Region-wise, North America held the highest market share in terms of revenue in 2022, accounting for nearly half of the market revenue, and is expected to dominate the market during the forecast period, owing to multiple military and law enforcement modernization and enhancement programs underway in the region. However, Asia-Pacific is expected to witness the highest CAGR of 16.2% from 2023 to 2032, owing to the rise of adoption of UAV data services and rise in development of UAV and related software across major economies, such as China and India.

By application, the civil and commercial segment acquired the largest share in 2022, accounting for nearly one-third of the global fuel cell UAV market revenue and is estimated to maintain its leadership status throughout the forecast period as unmanned aerial vehicles are finding applications in aiding the management at construction sites, detecting methane in gas pipeline infrastructure and landfills, precision agriculture and farming, and various other commercial applications. Moreover, the others segment is projected to register the highest CAGR of 16.0% from 2023 to 2032, as consumers have increasingly used UAVs for recreational purposes, including personal interests and photography by citizens.

On the basis of end use, the others segment held the highest market share in 2022, accounting for nearly half of the global fuel cell UAV market revenue and is anticipated to maintain its leadership status throughout the forecast period as fuel cell UAVs are gaining traction across other industries due to the increased application among different industries and areas, such as keeping a watch over remote locations, miming surveillance, and medical product delivery. Moreover, the cargo UAV segment is projected to manifest the highest CAGR of 14.6% from 2023 to 2032, owing to increase in cargo supply activities at different locations.

By product type, the solid oxide fuel cell segment is anticipated to exhibit significant growth in the future.

By end use, the others security segment is anticipated to dominate the market in the coming future.

By type, the rotary wing segment is anticipated to lead the market.

By weight, the more than 50 kg segment is anticipated to exhibit fastest growth from

2023-2032.

By application, the others segment is anticipated to exhibit significant growth in the future.

By region, Asia-Pacific is anticipated to register the highest CAGR during the forecast period.

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