

High-Flying Hydrogen: Business Innovations in Fuel Cell UAV Technology

Fuel cell UAV market to reach \$4,472.92 million in 2031

PORTLAND, OREGON, UNITED STATES, May 16, 2023 /EINPresswire.com/ -- According to a new report published by Allied Market Research, titled, "[Fuel Cell UAV Market](#)," The fuel cell uav market was valued at \$1.4 billion in 2021, and is estimated to reach \$4.5 billion by 2031, growing at a CAGR of 12.3% from 2022 to 2031.



The concept of fuel cell UAVs is typically attributed to the transportation options that use a propulsion technology, which does not produce internal combustion engine exhaust or other carbon emissions when it operates. It is primarily designed to replace conventional ways 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 can be 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. For instance, in October 2020, ISS Aerospace launched SENSUS 6 UAV, a complete ecosystem for aerial applications. It allows ease of choice between long flight times or super heavy lift applications. The product offers many advantages for commercial, defense & security UAV users, including providing a solution to the current issue of endurance for companies that need longer flight times, like inspection services, delivery, hydrocarbon emissions, defense and security applications.

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In addition, the fuel cell UAV market has witnessed significant growth in recent years, owing to the continuous improvement in technology and involvement from various industry leaders has made the development of fuel-cells for UAV successful. For instance, in April 2019, Ballard Unmanned Systems, Inc., a subsidiary of Ballard Power Systems, Inc. announced the launch of

the FCair fuel cell product line at the AUVSI Xponential Annual Conference, Chicago. It was a fuel cell power solution for commercial unmanned aerial vehicles (UAVs) with built-in hybrid battery control and charging. Furthermore, it was capable of delivering up to 1200 watts of power. Furthermore, the companies operating in the fuel cell UAV market have adopted partnerships, investments, and agreements to increase their market share and expand their geographical presence. For instance, in June 2022, Intelligent Energy Limited signed a manufacturing agreement with Hogreen Air, a manufacturer of hydrogen fuel cells and intelligent tech products to manufacture hydrogen fuel cells in South Korea. This provided Intelligent Energy Limited the opportunity to offer a wider range of products across drones and automotive segment in South Korea as well as the South East Asian region.

Upsurge in military spending, growth in the demand for improved surveillance, and supportive growth through regulatory compliance are expected to drive the [growth of the fuel cell UAV market](#). However, increase in security issues & cyber threat and high cost of fuel cells for UAV solutions restrain the growth of the market. On the contrary, technological advancements in military applications and increasing public-private partnerships are projected to offer lucrative growth opportunities for the market players.

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COVID-19 Impact Analysis:

The COVID-19 crisis is creating uncertainty in the market. Governments of different regions have already announced total lockdown and temporarily shutdown of industries, thereby adversely affecting the overall production and sales. Countries around the globe have posed stringent restrictions ranging from days to months of lockdown periods. Owing to this pandemic, many businesses are halted and are waiting for the market conditions to improve.

The fuel cell UAV industry is one of those industries that is poised for better growth post COVID-19. However, the sale of fuel cell UAVs was dampened in the first quarter of 2020. The major risk factors of the fuel cell UAV market participants are regulatory & policy changes, dependency on labor, working capital management, and liquidity & solvency management. Majority of the developing facilities of fuel cell unmanned aerial vehicle (UAV) has been shut down during the pandemic due to commute restrictions, workforce unavailability, and supply chain disturbance. Private and commercial security industries were one of the most severely affected industries by the pandemic and observed a decline of investments initially.

In addition, the reduction in aerospace spending has had a negative impact on autonomous aircraft development and deployment plans, particularly on fuel cell unmanned aerial vehicles (UAVs). Various countries with the foundations of a drone-friendly environment, such as the U.S., UK, China, Germany, and others, were able to quickly mobilize the technology from the start of the pandemic. These countries were able to incorporate fuel cell unmanned aerial vehicle (UAV)

into the COVID-19 response activities, due to enabling factors such as favorable regulations, skilled workforce, presence of vital resources, high adoption, and others.

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KEY FINDINGS OF THE STUDY

By product type, the solid oxide fuel cell segment dominated the global fuel cell UAV market in 2021 in terms of growth rate.

On the basis of end use, the cargo UAV segment is anticipated to exhibit a remarkable growth during the forecast period.

On the type, the hybrid segment is the highest contributor to the fuel cell UAV market in 2021 in terms of growth rate.

By weight, the more than 50 kg segment is anticipated to exhibit a remarkable growth during the forecast period.

On the basis of application, the others segment is anticipated to exhibit a remarkable growth during the forecast period.

By region, Asia-Pacific is anticipated to exhibit a remarkable growth during the forecast period.

The leading players operating in the fuel cell UAV market are AeroVironment Inc., Ballard Power Systems, Boeing, Elbit Systems Ltd., EnergyOR, General Atomics, H3 Dynamics, Horizon Fuel Cell Technologies, Intelligent Energy Limited, Israel Aerospace Industries (IAI), ISS Aerospace, Jadoo Power Systems, Inc., MMC-UAV, Northrop Grumman Corporation, Textron Inc., Ultra, and ZeroAvia, Inc.

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