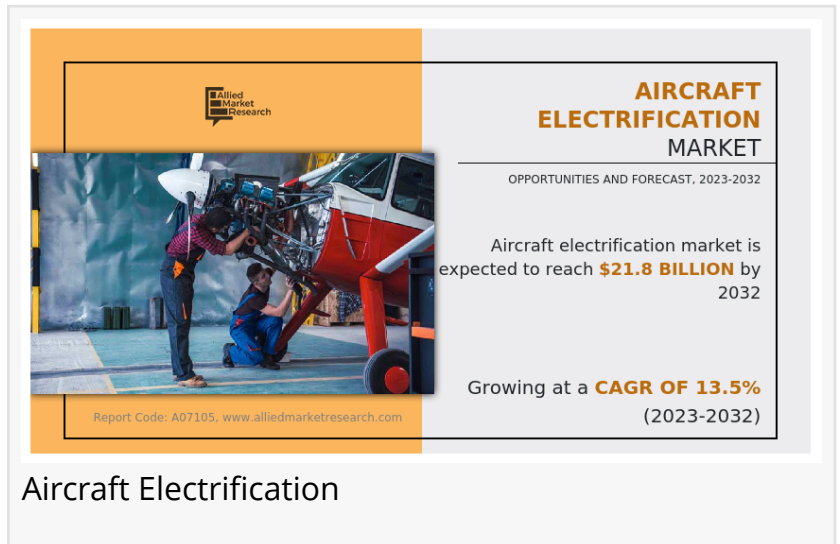


Electric Propulsion in Aviation: Challenges and Opportunities

Aircraft Electrification Market to reach \$21,777.20 million by 2032 | Size, Share, Trends, Analysis

WILMINGTON, DELAWARE, UNITED STATES, October 17, 2023

/EINPresswire.com/ -- Aircraft electrification refers to the use of electric power in various systems and components of an aircraft, as opposed to traditional fossil fuel-based technologies. This covers electrically powered systems including air conditioning, hydraulic systems, and other auxiliary systems, as well as electric motors, batteries, power electronics, and distribution systems.



The global [aircraft electrification market size](#) was valued at \$6.2 billion in 2022, and is projected to reach \$21.8 billion by 2032, growing at a CAGR of 13.5% from 2023 to 2032.

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Europe dominated the [global aircraft electrification industry](#) in 2022. The European aviation industry is a large market for airlines and airline component manufacturers. The European countries are aligning their workforce toward designing and creating electric aircraft technologies for the European aviation industry. France is expected to hold a dominant revenue [Aircraft Electrification Market](#) share throughout the forecast period owing to growing aviation start-up companies and the introduction of electrification in aircraft in the country. For instance, in December 2021, French aviation start-up Ascendance Flight Technologies launched the design of the Atea, a five-seater vertical take-off and landing (VTOL) aircraft, maximum take-off weights is between 450kg and 2,200kg, and projected flight ranges from 16km to 300km.

There is a growing demand for aircraft electrification due to the need for more efficient and environmentally friendly aircraft, the demand for lower operating costs, and advancements in electric propulsion and energy storage technologies. Aircraft electrification is the need to reduce

the environmental impact of aviation. Electric propulsion systems produce fewer emissions than traditional fossil fuel-based systems, making them a more environmentally friendly option. For instance, in 2020, Airbus revealed three concepts for hydrogen-powered aircraft that could enter service by 2035. These planes would offer a more sustainable and efficient solution for the aviation industry.

Moreover, advancements in electric propulsion and energy storage technologies are driving the adoption of electrification in aircraft. The development of more efficient and powerful electric motors, as well as high-capacity batteries, is making it possible to design and operate aircraft with greater range and performance.

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On the basis of technology, the global aircraft electrification market has been segmented into more electric, hybrid electric, and fully electric. Hybrid electric is a combination of electric and traditional combustion engines to power aircraft. In a hybrid electric aircraft, an electric motor is used to supplement the traditional gas turbine engine. Hybrid electric technology can help to achieve this goal by reducing fuel consumption and emissions. Airbus is in the development of hybrid electric aircraft technology. The company has developed a prototype hybrid electric aircraft called the E-Fan X, which is designed to be used for regional flights.

Furthermore, hybrid electric technology in aircraft electrification is the development of electric powertrains with greater power and efficiency. Companies such as MagniX and Ampaire are developing electric motors that can produce enough power to propel commercial aircraft. For instance, in 2020, the program tested a more electric flight control system on a Boeing 737, replacing traditional hydraulic systems with electric motors and actuators. In addition, Companies such as Bell and Joby Aviation are developing VTOL aircraft with hybrid-electric propulsion systems that could be used for urban air mobility and other applications.

In recent years, the US government has actively encouraged the creation and use of aircraft electrification technologies. The Electric Aircraft Safety and Sustainability Initiative, a new initiative of the Federal Aviation Administration (FAA) that intends to facilitate the safe integration of electric aircraft into the national airspace system, was unveiled in 2021. The Center of Excellence for Electric Propulsion and Energy Storage, a partnership between the FAA and various institutions focused on improving electric propulsion technology, is one of the efforts that the FAA has formed to encourage the development of electric aviation technologies. The US government has also provided funding for the development of electric and hybrid electric aircraft through initiatives such as the Small Business Innovation Research program and the Advanced Technology Vehicles Manufacturing loan program.

Furthermore, several aircraft manufacturing companies are actively pursuing the development and adoption of electrification in aircraft. For instance, Airbus has been exploring various

electric and hybrid-electric aircraft concepts, including the E-Fan X program, which aims to develop a hybrid-electric propulsion system for regional aircraft. The company has also unveiled three hydrogen-powered aircraft concepts that could enter service by 2035.

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Key players operating in the global aircraft electrification market are Ametek, Astronics Corporation, BAE Systems plc., Honeywell International Inc., Magnix, Meggitt PLC, Collins Aerospace, Rolls Royce Plc, Safran, and Thales Group.

KEY FINDINGS OF THE STUDY

By component, the Fuel Cells segment is anticipated to exhibit significant growth in the near future.

By application, the Energy Storage segment is anticipated to exhibit significant growth in the near future.

By technology, the Fully Electric segment is anticipated to exhibit significant growth in the near future.

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

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