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Electrified Aircraft Propulsion Market Forecasts to 2030 – Global Analysis By Aircraft Type (Urban Air Mobility (UAM), Regional Aircraft, Commercial Aircraft, Cargo Aircraft, General Aviation Aircraft, Military Aircraft and Other Aircraft Types), Propulsion Type, Component, Power Source, End User and By Geography

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Abstracts

According to Stratistics MRC, the Global Electrified Aircraft Propulsion Market is accounted for $8.02 billion in 2024 and is expected to reach $19.74 billion by 2030 growing at a CAGR of 16.2% during the forecast period. Electrified aircraft propulsion refers to the integration of electric or hybrid-electric power systems in aircraft to replace or supplement conventional gas-powered engines. This technology involves using electric motors, batteries, or fuel cells to drive the aircraft's propellers or fans, aiming to reduce fuel consumption, emissions, and operational costs. EAP is seen as a key solution for advancing sustainable aviation, particularly for short-to-medium-haul flights.

According to the International Energy Agency (IEA), global flights produced around 720 million tons of carbon dioxide in 2021. The global aviation industry produces over 2% of all the CO2 emissions induced by humans.

Market Dynamics:

Driver:

Increased urban air mobility

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UAM solutions aim to address urban congestion and provide efficient, sustainable air transportation, relying heavily on electric propulsion for short-haul flights. The rise of eVTOL aircraft, which utilize EAP systems for noise reduction, lower emissions, and reduced operating costs, accelerates innovation and investment in electric propulsion technologies. As UAM expands globally, the demand for advanced electric propulsion systems grows, propelling the market by offering a cleaner, faster, and more efficient alternative to traditional transportation.

Restraint:

Infrastructure challenges

Infrastructure challenges in electrified aircraft propulsion arise from the lack of widespread charging stations, maintenance facilities, and support systems required for electric aircraft. The absence of a robust infrastructure network also delays the deployment of electric aircraft in mainstream aviation, restricting their range, frequency of use, and integration into existing aviation ecosystems. This hampers market growth by limiting operational feasibility, particularly for commercial applications and large-scale adoption.

Opportunity:

Growing consumer awareness on sustainable travel options

As travellers increasingly prioritize eco-friendly travel alternatives, airlines and aviation companies are under pressure to reduce their carbon footprint. This shift in consumer behaviour has led to heightened interest in electric aircraft, as they offer a cleaner, greener alternative to traditional fuel-powered planes. The increasing public demand for sustainability encourages investments in electric propulsion technologies and pushes governments to implement regulations and incentives, thus propelling the growth of the EAP market as part of the broader green aviation movement.

Threat:

High development costs

High development costs in electrified aircraft propulsion arise from the complex nature of designing and testing electric propulsion systems, including electric motors, batteries, and energy storage solutions. The need for extensive research, certification, and

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infrastructure development also adds to the cost. Airlines and manufacturers may hesitate to commit to these technologies without a clear return on investment. These high expenses hinder market growth by limiting investment from smaller companies and slowing adoption.

Covid-19 Impact

The covid-19 pandemic temporarily slowed the growth of the electrified aircraft propulsion market due to disruptions in research, development, and manufacturing activities. Travel restrictions, reduced aviation demand, and financial uncertainties delayed investment in new technologies. However, the pandemic also heightened focus on sustainability and environmental recovery, renewing interest in green aviation solutions. Post-pandemic, the market is expected to rebound as governments and industries prioritize clean energy technologies, supporting the long-term growth of EAP innovations.

The commercial aircraft segment is expected to be the largest during the forecast period

The commercial aircraft segment is predicted to secure the largest market share throughout the forecast period. EAP in commercial aircraft focuses on replacing or supplementing traditional jet engines with electric motors or hybrid-electric systems. This shift aims to reduce fuel consumption, lower emissions, and enhance operational efficiency. EAP technology is particularly suitable for short#- #to medium-haul flights, offering sustainable, cost-effective solutions for the aviation industry.

The supercapacitors segment is expected to have the highest CAGR during the forecast period

The supercapacitors segment is anticipated to witness the highest CAGR during the forecast period. Supercapacitors are emerging as a potential power source in electrified aircraft propulsion due to their ability to deliver high power output quickly and efficiently. They also have a longer lifespan and higher cycle stability. Integrating supercapacitors with batteries or hybrid systems can enhance the overall performance and efficiency of electric aircraft, driving advancements in sustainable aviation technology.

Region with largest share:

Asia Pacific is expected to register the largest market share during the forecast period due to increasing government support for sustainable aviation, rising environmental

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concerns, and rapid advancements in electric aircraft technology. Key players in the Asia-Pacific EAP market include Boeing, Rolls-Royce, Mitsubishi Electric, and Hyundai Motor Group. The region also benefits from strong aerospace manufacturing capabilities and partnerships. Further, technological advancements and government initiatives supporting green aviation solutions accelerates the market growth.

Region with highest CAGR:

North America is expected to witness the highest CAGR over the forecast period driven by strong governmental support for sustainable aviation, significant investments in green technologies, and the increasing focus on reducing carbon emissions. Major players in the region include Boeing, GE Aviation, Honeywell, and Rolls-Royce. The region is witnessing the growing demand for electric vertical take-off and landing (eVTOL) aircraft. North America's market growth is fueled by innovation, funding, and a push for cleaner aviation solutions.

Key players in the market

Some of the key players profiled in the Electrified Aircraft Propulsion Market include Rolls-Royce, Boeing, Airbus, Safran, General Electric (GE), Honeywell International, magniX, Vertical Aerospace, Lilium, Pipistrel, Zunum Aero, Ampaire, Ampyx Power, Quantum Systems, Hartzell Propeller, Terrafugia, Stralis Aircraft, Electra.aero, SkyDrive and Heart Aerospace.

Key Developments:

In December, 2024, Stralis Aircraft completed a successful hydrogen-electric propeller spin test at Brisbane Airport. This test utilized fuel cells and gaseous hydrogen, emitting only water vapor, marking a significant step toward emission-free aviation.

In November 2024, Heart Aerospace announced plans to conduct the first experimental flight of its X1 demonstrator in 2025. This aircraft is designed to validate the company's electric propulsion technology and is similar in size to the upcoming 30-passenger ES-30 commercial aircraft.

Aircraft Types Covered:

- Urban Air Mobility (UAM)

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- Regional Aircraft
- Commercial Aircraft
- Cargo Aircraft
- General Aviation Aircraft
- Military Aircraft
- Other Aircraft Types

Propulsion Types Covered:

- Fully Electric Propulsion
- Hybrid Electric Propulsion
- Fuel Cell Electric Propulsion
- Turboelectric Propulsion
- Other Propulsion Types

Components Covered:

- Electric Motors
- Propellers
- Inverters
- Power Electronics
- Energy Storage Systems
- Power Management Systems

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- Electric Distribution Systems
- Other Components

Power Sources Covered:

- Batteries
- Fuel Cells
- Supercapacitors
- Other Power Sources

End Users Covered:

- Aircraft Manufacturers
- Aviation Operators
- Government and Defense Contractors
- Other End Users

Regions Covered:

- North America
  - US
  - Canada
  - Mexico
- Europe

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- Germany
- UK
- Italy
- France
- Spain
- Rest of Europe

Asia Pacific

- Japan
- China
- India
- Australia
- New Zealand
- South Korea
- Rest of Asia Pacific

South America

- Argentina
- Brazil
- Chile
- Rest of South America

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Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

What our report offers:
- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2022, 2023, 2024, 2026, and 2030
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as

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per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

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