Aircraft Electrical Systems Market Size & Share Analysis - Growth Trends and Forecast (2026 - 2031)

> **Industry:** Commercial Aviation & Avionics (Aerospace & Defense)
> **Source:** https://www.mordorintelligence.com/industry-reports/aircraft-electrical-systems-market
> **Scraped Date:** 2026-09-17

Executive Market Summary

Market Metric	Details
Base Market Size	USD 26.09 billion
Projected Forecast (2031)	USD 26.09 billion
Growth Rate (CAGR)	7.28 %
Largest Market Region	N/A
Fastest-Growing Region	N/A

Market Visualizations & Infographics

Comprehensive Research Analysis

Overview Points List Flex 49 Share Feature End

Market OverviewStudy Period | 2019 - 2031 |
Market Size (2026) | USD 26.09 Billion |
Market Size (2031) | USD 37.07 Billion |
Growth Rate (2026 - 2031) | 7.28 % |
Fastest Growing Market | Asia Pacific |
Largest Market | North America |
Market Concentration | Medium |
Major Players*Disclaimer: Major Players sorted in no particular order

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Market Overview

Aircraft Electrical Systems Market Analysis by Mordor IntelligenceThe aircraft electrical systems market size is expected to grow from USD 23.13 billion in 2025 to USD 26.09 billion in 2026 and is forecasted to reach USD 37.07 billion by 2031 at a 7.28% CAGR over 2026-2031. This growth stems from airline and OEM preferences for More-Electric Aircraft (MEA) designs, which replace pneumatic and hydraulic subsystems with electrically powered equivalents, thereby lowering fuel burn and maintenance demands. Robust commercial backlogs at Airbus SE, The Boeing Company, and COMAC, accompanied by rising widebody retrofits for higher cabin power budgets, secure steady demand across power-generation, distribution, conversion, and energy storage hardware. The continued adoption of 270-volt-plus direct current distribution reduces copper weight by up to 40% while encouraging suppliers to shift toward silicon-carbide (SiC) semiconductors, which are rated for junction temperatures exceeding 200 °C. Hybrid-electric propulsion demonstrators validate high-power starter-generators, and rapid eVTOL prototyping accelerates certification activity for next-generation batteries, converters, and power-distribution software. Collectively, these trends ensure that the aircraft electrical systems market maintains a balanced mix of OEM linefit and aftermarket retrofit opportunities through the early 2030s.

Key Report Takeaways* By system, power distribution led with a 34.41% revenue share in 2025, while energy storage is forecasted to post a 9.44% CAGR through 2031.
* By component, generators and starter-generators held a 23.22% share in 2025, whereas battery packs and battery management systems are projected to expand at an 8.24% CAGR through 2031.
* By platform, commercial aviation accounted for a 63.87% share in 2025, and general aviation is expected to grow at a 9.12% CAGR through 2031.
* By application, power generation management captured a 29.12% share in 2025, while cabin system electrification is expected to increase at an 8.56% CAGR through 2031.
* By geography, North America commanded a 42.22% share in 2025, and the Asia-Pacific region is projected to register the fastest CAGR of 8.01% from 2026 to 2031.

Key Market Trends

Market Trends and InsightsDrivers Impact Analysis of Aircraft Electrical Systems Market*Driver | (~) % Impact on CAGR Forecast | Geographic Relevance | Impact Timeline |
Increasing adoption of More-Electric Aircraft (MEA) architectures to reduce mechanical complexity and improve efficiency | +2.1% | Global, concentrated in North America and Europe | Medium term (2–4 years) |
Rising aircraft production volumes and sustained order backlogs driving demand for advanced electrical systems | +1.8% | Global, led by Asia-Pacific and North America | Short term (≤ 2 years) |
Implementation of high-voltage direct current (HVDC) distribution systems to support next-generation power architectures | +1.5% | North America and Europe, early adoption in Asia-Pacific | Long term (≥ 4 years) |
Growing need for lightweight and compact electrical systems tailored to unmanned aerial platforms | +0.9% | North America and Middle East, expanding to Asia-Pacific | Medium term (2–4 years) |
Silicon-carbide (SiC) power electronics enable higher temperature limits | +0.7% | Global, led by North America and Europe | Long term (≥ 4 years) |
Retrofit-driven upgrades focused on cabin electrification, including in-seat power and galley modernization | +0.6% | Global, concentrated in mature aviation ma

rkets | Short term (≤ 2 years) |
Source: Mordor Intelligence |

Competitive Landscape

Competitive Landscape

The aircraft electrical systems market exhibits moderate consolidation, with the top five suppliers accounting for over 50% of the global revenue. Honeywell International Inc., RTX Corporation, Safran SA, General Electric Company, and Thales Group actively engage in mergers and acquisitions (M&A) to address capability gaps. Honeywell's CAES takeover extends its RF-shielding and electromagnetic compatibility expertise, while Thales Group absorbs Cobham Aerospace Communications to expand its cockpit connectivity capabilities.

Technology differentiation orbits around power density, HVDC integration, and cyber-resilience. Major players channel R&D dollars into silicon-carbide devices that sustain 200 °C junctions, thus reducing cooling mass. Smaller firms position themselves in niche eVTOL subsystems, often partnering with incumbents to navigate the complexity of certification. The regulatory environment reinforces incumbency, as extensive compliance track records are prerequisites for type certificate amendments.

Technological differentiation centers on silicon-carbide power electronics, where Wolfspeed and Infineon supply MOSFETs that raise operating temperature limits and cut heat-sink mass 30%. Patent filings for solid-state circuit breakers and bidirectional converters increased by 35% between 2023 and 2025, indicating supplier confidence in HVDC adoption for the next commercial single-aisle. Consolidation continues, as illustrated by Parker-Hannifin's 2022 acquisition of Meggitt, which merges hydraulic and electrical actuation. Meanwhile, Tier-2 suppliers in the Asia-Pacific region are expanding their wiring-harness capacities, although AS9100 audits are extending qualification cycles, thereby maintaining their incumbent advantage within the aircraft electrical systems market.

Aircraft Electrical Systems Industry Leaders* RTX Corporation

* Honeywell International Inc.

* General Electric Company

* Thales Group

* Safran SA

* *Disclaimer: Major Players sorted in no particular order

Scope Methodology P Space

This market covers the onboard electrical systems used on aircraft to generate, distribute, convert, protect, and store electrical power so that flight, cabin, and utility loads can operate reliably across different missions.

Scope exclusions: Excludes standalone avionics boxes, in-flight entertainment boxes, and ground power units to reduce double counting with adjacent avionics and ground support markets.

Segmentation Container

* By System* Power Generation
* Power Distribution
* Power Conversion

* Energy Storage

* By Component* Generators and Starter-Generators
* Power Distribution Units
* Converters
* Battery Packs and Battery Management System (BMS)
* Wiring and Cables
* Connectors and Contactors
* Power-distribution Software

* By Platform* Commercial Aviation* Narrowbody
* Widebody
* Regional Jets
* Freighters

* Military Aviation* Combat Aircraft
* Transport Aircraft
* Unmanned Aerial Vehicles (UAVs)
* Trainer Aircraft

* General Aviation* Business Jets
* Helicopters
* Electric Vertical Take-Off and Landing (eVTOL)/Advanced Air Mobility (AAM)

* By Application* Power Generation Management
* Flight Control and Operation
* Cabin System
* Configuration Management
* Air Pressurization and Conditioning

* By Geography* North America* United States
* Canada
* Mexico

* Europe* United Kingdom
* France
* Germany
* Italy
* Rest of Europe

* Asia-Pacific* China
* India
* Japan
* South Korea
* Australia
* Rest of Asia-Pacific

* South America* Brazil
* Rest of South America

* Middle East and Africa* Middle East* Saudi Arabia
* United Arab Emirates
* Rest of Middle East

* Africa* South Africa
* Rest of Africa

Frequently Asked Questions

What is the projected value of the aircraft electrical systems market in 2031?

The aircraft electrical systems market is forecasted to reach USD 37.07 billion by 2031, growing at a 7.28% CAGR.

Which geographic region is expected to grow fastest through 2031?

Asia-Pacific is projected to post an 8.01% CAGR, the highest among all regions.

Which system segment shows the highest growth potential?

Energy storage systems are expected to expand at a 9.44% CAGR as eVTOL and hybrid-electric programs mature.

How dominant are incumbents in the competitive landscape?

The top five suppliers hold more than 50% share, reflecting moderate concentration but ongoing space for new entrants.

What certification challenge most affects battery adoption?

Compliance with FAA AC 20-184 thermal-runaway containment tests adds USD 2-4 million per battery design and can delay programs 12-18 months.

Which application area is projected to grow quickest?

Cabin system electrification leads with an 8.56% CAGR, driven by in-seat power, high-definition IFE, and induction-galley retrofits.