Aircraft Battery Market by Chemistry (Lead-Acid, Nickel, Lithium), Density (<100, 100-300, >300 Wh/Kg), Capacity (<20, >20Ah), Propulsion (Conventional, Hybrid, Electric), Platform (Commercial, Military, UAV, AAM), Application Region - Forecast to 2030

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Report description:

The aircraft battery market is projected to grow from USD 1.61 billion in 2025 to USD 2.40 billion by 2030 at a CAGR of 8.3%.

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The aircraft battery market is advancing rapidly as aviation shifts toward electrification, sustainability, and operational efficiency. The growing adoption of more-electric and hybrid-electric aircraft creates strong demand for batteries that provide higher energy density, reduced weight, and improved safety, supporting propulsion and auxiliary functions. Expanding deployment of eVTOLs and urban air mobility solutions is further fueling growth, as these platforms are entirely dependent on high-performance lithium-based technologies for short-range, high-frequency missions. Commercial operators are intensifying fleet renewal efforts to cut emissions and operating expenses, increasing reliance on batteries for auxiliary power units, emergency backup, and main starting systems.
On the defense side, batteries are becoming integral to unmanned aerial vehicles, surveillance aircraft, and next-generation combat platforms, driving consistent adoption across critical missions. Parallel advancements in battery management, thermal regulation, and certification standards are improving reliability while reducing lifecycle costs, encouraging wider uptake. At the same time, regulatory commitments to decarbonization and strong investment in next-generation chemistries such as solid-state and lithium-sulfur are shaping long-term opportunities. Collectively, these dynamics position batteries as an essential enabler of aviation's sustainability roadmap, ensuring steady growth across commercial, defense, and advanced air mobility applications.

"By propulsion type, the conventional aircraft segment is projected to account for the largest share in the aircraft battery market in 2025."
Conventional aircraft continue to generate the highest demand for aviation batteries as they dominate global fleet operations across commercial, business, and defense segments. These platforms rely heavily on batteries to power auxiliary units, support main engine starts, and ensure reliable emergency backup, making them indispensable for day-to-day operations. With thousands of narrow-bodies and wide-body aircraft in service worldwide, along with large regional and business jet fleets, the scale of installed base ensures consistent demand for replacement cycles and aftermarket services. Airlines are also prioritizing fleet modernization programs, which further reinforce battery adoption as newer aircraft integrate advanced lithium-ion solutions for improved efficiency and reduced maintenance compared to traditional chemistries.
"By lift technology, the VTOL segment is projected to register the highest growth in the aircraft battery market during the forecast period."
The vertical take-off and landing (VTOL) segment is rapidly emerging as a key driver of battery demand, supported by the accelerating development of eVTOL aircraft for urban air mobility, defense, and regional transport applications. These platforms depend entirely on advanced battery technologies as their primary power source, requiring high energy density, lightweight construction, and fast-charging capabilities to achieve operational feasibility. Strong investments from aerospace OEMs, startups, and technology companies are fueling large-scale prototyping and pilot programs, particularly in North America, Europe, and Asia, where governments are actively supporting electric aviation initiatives. The appeal of VTOL aircraft lies in their ability to provide point-to-point connectivity, reduce urban congestion, and operate with lower emissions and noise compared to helicopters, aligning closely with sustainability and regulatory objectives. This unique operational profile places significant emphasis on reliable battery performance, driving innovation in lithium-ion, solid-state, and lithium-sulfur chemistries tailored for short-haul, high-frequency missions.
"By energy density, the 100-300 Wh/Kg segment is projected to account for the largest share during the forecast period."
The 100-300 Wh/Kg is projected to account for the largest share of the aircraft battery market during the forecast period because it represents the most commercially viable balance between performance, safety, and cost for aviation applications, which is why they dominate adoption across existing and emerging aircraft platforms. This range is well suited for powering auxiliary power units, main engine starting systems, and emergency backup functions in conventional aircraft, while also meeting the requirements of eVTOLs, regional electric aircraft, and unmanned aerial vehicles. Batteries within this category provide sufficient energy storage to support reliable operations while maintaining compliance with strict aviation safety standards related to thermal stability and lifecycle performance. Additionally, they offer a cost-effective solution compared to higher-density chemistries, which remain in the research phase and face challenges with thermal runaway and certification readiness. Many aerospace-certified lithium-ion solutions currently fall within this bracket, making them a natural fit for OEM integration and aftermarket replacement.
"The Asia Pacific is projected to be the fastest-growing regional market in the aircraft battery market during the forecast period."
The Asia Pacific is projected to be the fastest-growing regional market in the aircraft battery industry during the forecast period because it is a pivotal growth hub for aircraft batteries, supported by rapid fleet expansion, rising defense budgets, and strong government backing for aviation electrification initiatives. Countries such as China, India, Japan, and South Korea drive commercial aircraft deliveries to meet growing passenger traffic, directly boosting demand for battery systems integrated into auxiliary power units, emergency backup, and main starting applications. In parallel, regional defense modernization programs are accelerating the adoption of advanced batteries for unmanned aerial vehicles, surveillance platforms, and next-generation combat aircraft, further strengthening market potential.
The region is also positioning itself at the forefront of advanced air mobility, with China and Japan investing heavily in eVTOL development and urban air mobility ecosystems that are fully dependent on high-density lithium-based chemistries. Additionally, favorable regulatory frameworks, local manufacturing capabilities, and strategic partnerships between global OEMs and regional suppliers are enhancing production scalability and reducing supply chain constraints. With a combination of strong passenger growth, government-driven sustainability policies, and accelerating deployment of electric and hybrid platforms, the APAC region is becoming a critical driver of global aircraft battery adoption, creating significant opportunities for both established players and emerging innovators in the sector.
The study contains insights from various industry experts, from component suppliers to Tier 1 companies and OEMs. The break-up

of the primaries is as follows:
-□By Company Type: Tier 1-35%; Tier 2-45%; and Tier 3-20%
-□By Designation: C-Level Designations-25%; Directors-30%; and Others-45%
-□By Region: North America-42%; Europe-18%; Asia Pacific-14%; Middle East-10%; Latin America - 9%; and Africa - 7%
DJI (China), EaglePicher Technologies (US), Saft (France), EnerSys (US), and Concorde Battery Corporation (US) are some of the leading players operating in the aircraft battery market.
Research Coverage
The study covers the aircraft battery market across various segments and subsegments. It aims to estimate this market's size and growth potential across different segments based on battery chemistry, battery component, energy density, power capacity, application, propulsion technology, lift technology, point of sale, platform, and region. This study also includes an in-depth competitive analysis of the key players in the market, their company profiles, key observations related to their solutions and business offerings, recent developments, and key market strategies they adopted.
Key Benefits of Buying this Report
This report will help market leaders/new entrants with information on the closest approximations of the revenue numbers for the overall aircraft battery market and its subsegments, as it covers the entire ecosystem of the aircraft battery market. It will help stakeholders understand the competitive landscape and gain more insights to position their businesses better and plan suitable go-to-market strategies. The report will also help stakeholders understand the market's pulse and provide them with information on key market drivers, restraints, challenges, and opportunities.
The report offers insights into the following points:
-□Analysis of key drivers and factors, such as increasing electrification of aircraft fleets due to comparatively lower costs, emission regulations driving battery-based retrofits in legacy aircraft fleets, enhancements in battery design for electric and hybrid aircraft integration, and increasing deliveries of commercial and military aircraft worldwide
-□Product Development: In-depth product innovation/development analysis by companies across various regions
-□Market Development: Comprehensive information about lucrative markets-the report analyses the aircraft battery market across various regions
-□Market Diversification: Exhaustive information about new solutions, untapped geographies, recent developments, and investments in the aircraft battery market
-□Competitive Assessment: In-depth assessment of market shares, growth strategies, and product offerings of leading players, such as DJI (China), EaglePicher Technologies (US), Saft (France), EnerSys (US), and Concorde Battery Corporation (US), among others, in the aircraft battery market.

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