

Military Power Solutions - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

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Report description:

The Military Power Solutions Market size is estimated at USD 7.77 billion in 2024, and is expected to reach USD 11.28 billion by 2029, growing at a CAGR of 7.75% during the forecast period (2024-2029).

The gradual but steady increase in the defense expenditure of the global armed forces has driven the procurement of several military platforms, such as armored vehicles, aircraft, and naval vessels, to strengthen their military capabilities. These platforms are designed to integrate several subsystems and equipment, all powered by one or more power solutions, thereby also creating a parallel demand for military power solutions that drive the market's growth. Moreover, the increasing deployment of military units in far-away war zones also increases the need for various types of mobile military power solutions like transportable generators, thereby driving the market's growth.

On the other hand, militaries must operate their equipment in harsh environmental conditions, which may make the power solutions malfunction. Certain battery technologies also require squibs (pyrotechnic charges) or gas generators for start-up, thermal insulation to protect against internal heat, and heating elements to ensure reliable operation at low temperatures. Hence, the military-grade requirements are generally strict, which will further challenge the entry and growth of the players.

Military Power Solutions Market Trends

Generators Segment to Continue Market Share Domination

- Military bases require a continuous and reliable electrical power source for various operational needs. Generators serve as a

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backup or supplementary power source, ensuring critical systems, communications, and equipment remain functional even during power outages or in remote locations. Rising spending on the defense sector and a growing focus on enhancing defense capabilities drive the market growth.

- In August 2023, the US Army and the US Air Force awarded Liquid Piston a contract to develop rotary engines that could displace the 30,000 small tactical generator sets currently in use and power drones. The company's high-efficiency hybrid cycle (HEHC) rotary engines are based on a new architecture and a unique thermodynamic cycle. This renders them very effective in compact power generation and powertrain applications where SWaP is critical.

- In August 2022, the US DoD started building a new prototype nuclear microreactor at the 890-square-mile Idaho National Laboratory as part of Project Pele. The micro-reactor is intended to provide reliable, abundant, and continuous energy by deploying nuclear power systems within the military. The project is scheduled for completion by 2027. It would use tri-structural isotopic (TRISO) nuclear fuel rods that are extremely heat-resistant and will not melt at the temperatures experienced inside a nuclear reactor core, even during a runaway reaction.

- The demand for generators also comes from military land vehicles for various operations. The versatility of the terrain and the criterion for usage have encouraged vehicle OEMs to integrate superior power solutions that are either sourced from third-party vendors or are developed in-house. Thus, the growing demand for generators in various military applications drives the market growth.

Asia-Pacific is Projected to Show Highest Growth During the Forecast Period

- Increased defense expenditure and rising procurement of advanced military systems from China, India, South Korea, and Japan drive the market growth across Asia-Pacific. China has invested its vast technological prowess toward indigenous development of several weapon systems to foster its military powers over all dominion - land, air, and water. China's navy is undergoing a huge naval fleet expansion, which is projected to help China surpass Russia as the largest navy in the world in terms of frigates and submarines. China continually emphasizes increasing its anti-submarine warfare (ASW) capabilities from coastal defense to blue-water operations. For instance, in September 2022, the Naval University of Engineering published a study stating that China has developed the world's most powerful battery for high-energy weapons, which can be mass-produced in the nation's many lithium battery plants. The 40165 battery was the first to release energy as quickly as a supercapacitor.

- Similarly, in March 2023, the Indian Ministry of Defense (MoD) signed a contract worth INR 19,600 crore (USD 2.39 billion) with Indian shipyards to procure 11 next-generation offshore patrol vessels and six following-generation missile vessels for the Indian Navy. The Defense Ministry inks over INR 9,100 crore (USD 1.11 billion) contracts for an improved Akash Weapon System and 12 weapon locating radars Swathi (Plains) for the Indian Army. Furthermore, India plans to replace its aging T-72 tanks with new-generation future tanks under the Future Ready Combat Vehicle program. Over the next decade, it is expected to induct about 1,700 new tanks. Hence, the country's growing geopolitical tensions and rapid procurement plans are expected to generate the demand for new military power solutions.

Military Power Solutions Industry Overview

The military power solutions market is semi-consolidated in nature. Some of the key players in the market are EnerSys, RTX Corporation, Cummins Inc., SAFT Groupe SAS, and SFC Energy AG. Many small/domestic companies occupy a relatively small market share. The manufacturers of military power solutions are continually looking for ways to develop power solutions considering the rules and regulations set by the various defense authorities worldwide. Players focus on developing innovative and sophisticated portable energy solutions with high power density for addressing the ever-growing complex and demanding power requirements of various military applications. This would help them gain new contracts from the militaries and expand their market share during the forecast period. For instance, in September 2023, EnerSys was selected to supply its thin plate pure lead

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batteries to the US Navy as primary storage on all four US Navy Nuclear submarine classes.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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