North America Space Propulsion - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2017 - 2029

Market Report | 2023-10-13 | 134 pages | Mordor Intelligence

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Report description:

The North America Space Propulsion Market size is estimated at USD 134.04 billion in 2024, and is expected to reach USD 195.25 billion by 2029, growing at a CAGR of 7.81% during the forecast period (2024-2029).

Major players and space agencies, involved in high space-related investment is the driving factor

- A satellite's propulsion system is commonly used to propel a spacecraft into orbit and coordinate its position. A liquid propellant rocket or liquid rocket utilizes a rocket engine that uses liquid propellants. Gas propellants may also be used but are not expected due to their low density and difficulty in applying conventional pumping methods. Liquids are desirable as they have a reasonably high density and specific impulse.
- Gas-based propulsion systems enable movements that have been proven efficient and reliable. These systems include hydrazine systems, other single or twin propulsion systems, hybrid systems, cold/hot air systems, and solid fuels. These systems are used when strong thrust or rapid manoeuvring is required. Therefore, gas-based propulsion systems remain the space propulsion technology of choice when their total impulse capacity is sufficient to meet the mission requirements.
- On the other hand, electric propulsion is commonly used to hold stations for commercial communication satellites. It is the main propulsion of some space science missions due to its high specific impulses. Northrop Grumman Corporation, Moog Inc., Sierra Nevada Corporation, SpaceX, and Blue Origin are some of the major providers of propulsion systems in the region. Liquid propulsion systems offer higher specific impulses compared to solid propulsion, resulting in greater efficiency and longer operational life for satellites. Major players and space agencies, like NASA, are involved in high space-related investments, enabling them to spend more on R&D and allowing them to innovate continuously and develop more efficient and advanced technologies. Launching new satellites in the region is expected to accelerate the market's growth during the forecast period.

Product innovation in propulsion technology is expected to boost growth

- The North American space propulsion market has witnessed a significant rise in private sector participation. Companies like SpaceX, Blue Origin, and Rocket Lab have emerged as key players, developing innovative propulsion technologies and reducing launch costs. This trend has led to increased competition and accelerated advancements in the field.
- Electric propulsion systems, particularly ion propulsion and Hall-effect thrusters, have gained prominence in the industry. These systems offer higher efficiency, longer operational lifetimes, and the capability for deep space missions. They are used in commercial and government space missions, including satellites and interplanetary probes.
- North America is one of the major markets globally, especially due to strong space exploration and development activity in the United States. NASA invests in start-ups to develop advanced propulsion systems for small satellites. NASA is also working on the Solar Electric Propulsion (SEP) project, which aims to extend the duration and capabilities of ambitious discoveries and science missions.
- Due to various government, commercial, and other players in the region, the demand in the satellite manufacturing industry is growing positively. During 2017-2022, 4,300+ satellites were launched in the region, aiding the space propulsion market. In addition to the number of such investments and technological developments, North America is expected to lead the market globally during the forecast period.

North America Space Propulsion Market Trends

Investment opportunities in the North American space propulsion market

- Investments in space programs are driving technological innovations and fostering the thriving satellite propulsion market. R&D initiatives associated with space programs lead to the creation of new propulsion systems, which offer increased efficiency and longer operational lifetime. These propulsion systems play a crucial role in spacecraft maneuvering, orbit maintenance, and mission longevity. The region's government and the private sector have dedicated funds for research and innovation in the space sector in terms of grants. In North America, government expenditure for space programs hit a record of approximately USD 24.8 billion in 2022. For instance, in February 2023, NASA distributed USD 333 million as research grants. Additionally, in 2022, the US government spent nearly USD 62 billion on its space programs, making it the world's highest spender in the space sector. Apart from the United States, the Canadian Space Agency budget is modest, and the estimated budgetary spending for 2022-23 is USD 329 million. In terms of funds allocated for NASA under the president's budget request summary for FY 2022-2027, NASA is expected to receive USD 45 million for the development of space power and nuclear propulsion.
- NASA is expected to receive USD 98 million to develop solar electric propulsion (SEP). In March 2021, NASA, Maxar Technologies, and Busek Co. completed a test of the 6-kilowatt (kW) solar electric propulsion subsystem successfully destined for the PPE. The Solar Electric Propulsion project was anticipated to receive the first qualification thruster from Aerojet Rocketdyne at the beginning of the first quarter of FY 2023. The government allocated funding of USD 110 million for developing nuclear thermal propulsion systems.

North America Space Propulsion Industry Overview

The North America Space Propulsion Market is moderately consolidated, with the top five companies occupying 52.89%. The

major players in this market are Ariane Group, Busek Co. Inc., Moog Inc., Northrop Grumman Corporation and Safran SA (sorted alphabetically).

Additional Benefits:

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

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