Marine Gensets Market Assessment, By Vessel Type [Commercial Vessel, Defense Vessel, Others], By Power Rating [Less than 1000 kW, 1000 kW to 5000 kW, 5000 kW to 10000 kW, Above 10000 kW], By Fuel Type [Diesel Power, Gas Power, Hybrid Generation Power, Others], By Region, Opportunities and Forecast, 2017-2031F

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Report description:

Marine gensets market is projected to witness a CAGR of 4.1% during the forecast period 2024-2031, growing from USD 4.62 billion in 2023 to USD 6.37 billion in 2031. The benefits of marine gensets include providing supplementary power to various ship systems and accessories, with the ability to be selected based on the power required on board and the flexibility to run on different fuel types such as diesel or gasoline. The factors driving the growth of the marine gensets market include the increasing demand for power in new-age ships, the rise in ship-building activities, and the continuously growing commercial vessel sector. Marine gensets play a crucial role in ship-building by providing supplementary power to various systems and accessories, ensuring the efficient operation of ships. They are essential for meeting the increasing demand for power in new-age ships and supporting the growing commercial vessel sector.

For example, in December 2023, Dutch shipping firm Transtal Shipping agreed with Thecla Bodewes Shipyards to construct a 5,100-dwt diesel-electric multi-purpose vessel. The vessel's design prioritizes fuel flexibility, incorporating three gensets and two electric motors. It is equipped to accommodate future fuels like methanol or hydrogen, with allocated onboard space for alternative energy sources, thereby eliminating the need to replace the electric propulsion system.

The advent of Dual Fuel Generators

Dual fuel generators are crucial in marine applications due to their versatility and adaptability. They can operate on two distinct fuels i.e. methanol and conventional, thereby enhancing their adaptability and reliability in various situations and making them suitable for different marine environments and operations.

For example, in October 2023, CMB.TECH and DBR collaborated to develop the first marine dual-fuel hydrogen gensets, with DBR being responsible for their construction and delivery. These gensets, designed for marine applications, featured a maximum

output of 940 kVA / 752 kWe at 60 Hz (1800 rpm) and could operate on diesel or in dual-fuel mode, thereby achieving emission savings of up to 83%. This collaboration aimed to accelerate the decarbonization of the maritime industry, with the gensets being suitable for commercial and recreational marine applications, complying with EPA Tier 3 and EU Stage V regulations respectively.

Frequent Usage of Diesel Generators is Accelerating the Market Growth Significantly

The frequent utilization of diesel generators is accelerating the growth of the marine gensets market due to rise in demand for efficient and reliable power generation systems in onshore and offshore support vessels.

For example, in May 2023, Cummins unveiled a new generator set featuring the Cummins B4.5 engine, available in both 50 Hz and 60 Hz models. This robust pairing offers genset ratings of 40-80 kWe and 80-110 kWe, respectively. The Cummins Onan Digital Display provides user-friendly diagnostics, offering extensive engine and alternator information, ensuring customer convenience on the water. The MDCT genset is suitable for commercial and recreational marine applications and complies with EPA Tier 3 and EU Stage V regulations, providing a power-dense, lightweight option with a base warranty of five years or 2,000 hours.

The Utilization of Offshore Gas Generators is Leading to Extensive Growth Opportunities

Offshore gas generators are of utmost importance in the marine industry. They are designed to withstand harsh marine conditions and are vital for powering machinery, appliances, and modern amenities, thereby ensuring uninterrupted power for offshore operations. Additionally, they are crucial for the oil and gas industry, supporting offshore drilling and production activities. Moreover, offshore gas generators are fundamental for meeting the energy needs of diverse offshore industries, where traditional power sources are not readily available.

For example, in February 2023, Caterpillar Inc. introduced 15 new gas generator sets, with ratings from 20 to 200 kW, designed for emergency standby, demand response, and prime applications. These generators offered high efficiency and low life cycle costs, and could be operated with various types of gas, including natural gas, biogas, coal gas, and alternative fuels. Moreover, the product portfolio of Caterpillar Energy Solutions included gas-fueled generator sets for various applications, characterized by flexibility, performance, and efficiency.

Asia-Pacific Emerged as the Market Leader in Marine Gensets

Asia-Pacific dominated the marine gensets market owing to the rise in ship-building activities in China, South Korea, and Japan. The flourishing shipbuilding industry in these countries, along with government initiatives regarding gas carrier vessels, propelled the demand for natural gas and defense vessels, thereby expediting the deployment of marine gensets across the region.

For example, in September 2023, China Merchants Heavy Industry (CMHI) ordered six small-bore, seven-cylinder 21/31DF-M methanol-burning gensets from MAN Energy Solutions for its new car carriers. The vessels were the first to be fitted with MAN Energy Solutions' M 21/31 DF-M methanol gensets, and each vessel had three methanol gensets. The vessels are set for delivery in 2025 and 2026, with the contract including an option for another four vessels. The move towards methanol as a marine fuel in China is driven by the need for expanded capacity and emission regulations, with the vehicle-transport sector's interest in using methanol at an all-time high.

Government Initiatives are Expediting the Market Growth

Government initiatives play a crucial role in driving the growth of the marine gensets market. These initiatives focus on promoting sustainable and decentralized energy sources, reducing environmental impact, and ensuring the well-being of coastal communities. By encouraging the adoption of cleaner alternatives such as LNG-powered and hybrid gensets, government policies aim to comply with stringent environmental regulations and sustainability initiatives.

For example, in May 2023, the United States Environmental Protection Agency introduced some strict policies for marine compression-ignition (diesel) engines. These regulations included relief provisions and modifications to the certification program to promote Tier 4 certification of engines with high power density. Moreover, the regulations aimed to control air pollution and reduce emissions from marine diesel engines, with additional international requirements potentially applying to engines on US vessels operating in foreign ports and waters.

Key Players Landscape and Outlook

The marine gensets market has experienced substantial investment from businesses, leading to significant sector expansion. This has resulted in a steep surge in market competitiveness, with major companies striving for dominance through joint ventures, R&D projects, and partnerships to enhance their product lines and gain a competitive edge. The future of the marine gensets

market appears promising, with substantial growth expected in the coming years, driven by advancements in offshore and onshore diesel generators and the increasing demand for power in commercial vessels, defense vessels, and offshore support vessels.

In June 2023, Rolls-Royce officially inaugurated a new USD 32.45 million assembly plant for its mtu Series 2000 engines in Kluftern, Germany. The relocation of the mtu Series 2000 engine assembly to Kluftern would enable the modernization of existing assembly halls, providing long-term production space for the Series 4000 engine. The investment emphasized Rolls-Royce's commitment to the region and its decarbonization efforts, with a strong focus on diesel engines that can run on a wide range of sustainable fuels, thereby significantly reducing carbon emissions.

In August 2022, ABB launched its highly efficient mtu 1400 permanent magnet shaft generator, which is a cutting-edge technology that significantly enhances the energy efficiency of marine vessels. By optimizing the use of the main engines and reducing the need for auxiliary generators, it saves on fuel costs and lowers emissions. The generator utilizes ABB's permanent magnet technology, is designed to align with Energy Efficiency Existing Ship Index and Carbon Intensity Indicator, offering a range of benefits to enhance efficiency. It is also smaller, lighter, and simpler to install, providing flexibility and ease of installation for a wide range of vessels, including container carriers, liquid natural gas tankers, and ferries.

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