# IGCT Market Forecast 2032: Reaching USD 26.0 million with a 6.9% CAGR

*By application, the drive segment dominated the IGCT market size in terms of revenue and is anticipated to grow at the fastest CAGR during the forecast period*

IGCT industry growth-demand-analysis

WILMINGTON, DE, UNITED STATES, July 15, 2025 /EINPresswire.com/ -- According to a new report published by Allied Market Research, titled, "IGCT Market by Type,  Application, and Region: Global Opportunity Analysis and Industry Forecast, 2024-2032", the market was valued at $14.3 million in 2023 and is projected to reach $26.0 million by 2032, growing at a CAGR of 6.9% from 2024 to 2032.

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An integrated gate commutated thyristor (IGCT) is a high-power semiconductor device used in power electronics applications, particularly for controlling and switching large electrical currents in industrial systems. IGCTs combine the features of insulated gate bipolar transistors (IGBTs) and traditional thyristors, offering high efficiency and fast switching capabilities. They are commonly used in high-voltage direct current (HVDC) systems, motor drives, inverters, and industrial converters due to their ability to handle high voltages and currents while minimizing power losses. IGCTs provide advantages like reduced conduction losses, higher reliability, and compact design, making them ideal for applications requiring robust and efficient power control, such as renewable energy systems, railway traction, and electric grids.

Integrated Gate-Commutated Thyristors (IGCTs) are critical components in modern power electronics, combining the advantages of both thyristors and transistors. They are known for their high efficiency and fast switching capabilities, making them ideal for high-power applications such as motor drives, renewable energy systems, and power converters. IGCTs can handle large voltage and current levels while providing excellent thermal performance, which enhances the overall reliability of power systems. Their ability to be turned off by a gate signal allows for greater control in various applications, contributing to improved system dynamics and

performance. Additionally, IGCTs reduce the need for bulky and complex cooling systems, leading to more compact designs. As renewable energy sources like wind and solar become increasingly important, IGCTs facilitate efficient energy conversion and management, playing a pivotal role in the transition to sustainable energy systems. Their versatility and performance make them indispensable in the evolving landscape of power electronics.

The integrated gate commutated thyristor (IGCT) is crucial in high-power electronics due to its ability to handle large electrical currents and high voltages efficiently. It combines the fast-switching capabilities of transistors with the robustness of thyristors, making it ideal for demanding applications like high-voltage direct current (HVDC) systems, industrial motor drives, and power grids. IGCTs offer lower conduction and switching losses, resulting in higher system efficiency and energy savings. They are also more compact, reliable, and durable compared to other power semiconductor devices, ensuring optimal performance in harsh environments. The importance of IGCTs is especially pronounced in renewable energy systems, electric transportation, and power distribution, where efficient power conversion and control are essential for operational stability.



The growing demand for energy-efficient power electronics systems in industries like renewable energy, transportation, and utilities is a key driver for the IGCT market. As energy efficiency and the need for reliable power management become more critical, IGCTs offer superior performance in handling high power and voltage applications with minimal energy losses. Their use in high-voltage direct current (HVDC) transmission systems, electric grid stabilization, and industrial motor drives supports the increasing focus on sustainable energy solutions.

However, a significant restraint for the IGCT market is the high cost of manufacturing and implementing these devices. IGCTs require advanced materials and complex fabrication processes, which result in higher production costs compared to traditional power semiconductor devices. This can limit adoption, especially in cost-sensitive industries, where the initial investment in IGCT technology might not be feasible for all companies.

Furthermore, the expansion of renewable energy projects, such as wind and solar farms, presents a substantial opportunity for the IGCT market. These energy sources require efficient and reliable power conversion systems to integrate into the grid. IGCTs, with their high efficiency and ability to handle large power loads, are well-suited for these applications. As governments and industries worldwide continue to invest in clean energy infrastructure, the demand for IGCTs in renewable energy systems is expected to grow significantly.

The IGCT market is segmented into type, application, and region. On the basis of the type, the market is divided into asymmetric IGCT, reverse blocking IGCT, and reverse conducting IGCT. By Application, the market is segmented into drive, traction, converter, and other. Region-wise, the

market is analyzed across North America, Europe, Asia-Pacific, Latin America, and Middle East & Africa.

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KEY FINDINGS OF THE STUDY

By type, the asymmetric IGCT segment dominated the IGCT market size in terms of revenue in 2023 and is anticipated to grow at a high CAGR during the forecast period.

By application, the drive segment dominated the IGCT market size in terms of revenue in 2023 and is anticipated to grow at the fastest CAGR during the forecast period.

Region-wise, Asia-Pacific generated the largest revenue in 2023 and is anticipated to grow at the highest CAGR during the forecast period.

The major players in the market are ABB Group, Mitsubishi Electric Corp., Infineon Technologies, Fuji Electric Co., Hitachi Energy, Siemens Energy, Danfoss, CRRC Corporation Limited, Semikron, and IXYS Corporation. Other players in the IGCT market include MacMic Group, CG Power and Industrial Solutions Limited.

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