

Power Transformer Market Assessment, By Type [Small power transformer, Medium Power Transformer, Large Power Transformer], By Application [Three-phase, Single-Phase], By Insulation [Oil, Air, Gas, Others], By Application [Industrial, Residential, Commercial, Utilities], By Region, Opportunities and Forecast, 2016-2030F

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Abstracts

Global power transformer market size was valued at USD 25.41 billion in 2022, which is expected to reach USD 47.38 billion in 2030, with a CAGR of 8.1% for the forecasted period between 2023 and 2030.

Power transformers offer vital benefits in electricity distribution, including voltage transformation and grid reliability. Factors driving the power transformer market growth include rising energy demands, increase in investments, grid expansion, and integration of renewable energy sources. Additionally, aging infrastructure replacement and technological advancements, such as smart grid development, are propelling market growth. Furthermore, the need for energy efficiency, reduced power loss, and environmental concerns are driving innovation and growth in the power transformer sector.

Companies are investing heavily in power transformers to meet growing demand from utilities, and supporting applications like renewable energy generation and data centers, ensuring reliable power distribution for various industries and infrastructures.

For example, in October 2022, Hitachi Energy announced the allotment of more than USD 37 million towards the enhancement and modernization of its power transformer

manufacturing plant situated in South Boston, Virginia. This strategic move aims to cater to the increasing demand from utility clients, as well as the rising needs in various sectors such as renewable energy generation and data centers.

Emergence of Highly Upgraded HV Technologies

The power transformer market is significantly driven by the emergence of advanced high-voltage (HV) technologies. These innovations play a prominent role in modernizing and optimizing electricity distribution networks. Upgraded HV technologies enhance grid efficiency, reduce power loss, and facilitate the integration of renewable energy sources. They contribute to grid reliability and sustainability. As the demand for more robust and efficient electrical infrastructure increases, the development and adoption of advanced HV technologies remains a crucial driver in market growth.

For example, in May 2023, NKT unveiled its intentions to construct a new facility with a third extrusion tower in Karlskrona, Sweden, along with a cutting-edge power cable vessel. These initiatives are motivated by the rising requests for high-tech, high-voltage power cables, robust order placement and a record backlog exceeding EUR 7 billion.

Rising Demand for Circuit Breakers is Fostering the Market Growth

The power transformer market is experiencing significant growth, driven by an increasing demand for circuit breakers. Circuit breakers are crucial components in electrical systems, offering protection against overcurrent and electrical faults. As industries and infrastructure projects expand, the need for reliable power distribution and safety measures increases, thereby propelling the demand for power transformers that can efficiently manage and safeguard electrical grids.

For example, in May 2023, The Housing and Development Board (HDB) of Singapore announced that all housing board flats, and private residences must install a residual current circuit breaker (RCCB) by July 1, 2023. Homeowners have a two-year grace period for compliance, with a potential USD 5,000 fine for non-compliance after July 1, 2025. Additionally, HDB has committed to cover installation and rewiring expenses for one and two-room flats constructed on or before July 1985, while occupants of larger flats will receive a subsidy of up to 95%.

Rise in the Need For Smart Meters is Expected to Cater to Substantial Opportunities

The growing demand for smart meters is anticipated to create significant opportunities

within the power transformer market. Smart meters enable enhanced monitoring and management of electricity consumption, making grids more efficient and reliable. They facilitate real-time data collection, contributing to better load management and grid optimization. As utilities and governments increasingly incorporate smart metering, the power transformer market stands to benefit, addressing the need for modernizing electrical infrastructure and enhancing overall energy management.

For example, in August 2022, the State Grid Corp. of China declared its intention to construct multiple extended power transmission lines, aligning with the country's clean energy goals and efforts to stimulate economic growth through infrastructure investment. The world's largest utility company would initiate a project worth USD 22 billion (CYN 150 billion) to deploy ultra-high-voltage power lines before the year's end.

North America Holds the Leading Position in Power Transformer Market

North America has taken a leading position in the power transformer market due to several key factors. The region's continuous investment in grid infrastructure, and implementation of various grid modernization initiatives are augmenting the market growth continuously in the region. Moreover, North America's focus on renewable energy integration and strict regulations for energy efficiency are further propelling the market growth.

For example, in March 2023, Metglas, Inc., a subsidiary of the Proterial Group, announced its plans to double production capacity for the HB1M Amorphous Steel product line, which is essential in the manufacturing of distribution transformers that supply electricity to residential and commercial properties. This expansion project in Conway, SC, would get completed by July 2023 and is expected to generate 30 new job opportunities. Furthermore, the company is actively considering additional expansion initiatives in 2024, which would enable Metglas to cover a substantial 20% share of the entire United States distribution transformer market.

Government Initiatives Boost Power Transformer Market

Government initiatives in the power transformer market are essential for fostering sustainable and resilient electrical infrastructure. They can promote energy efficiency, grid reliability, and environmental sustainability. Such measures often include regulations for energy-efficient transformers, incentives for grid modernization, and support for research and development for upgradations in transformer technologies. Moreover, government policies are crucial to meet increasing electricity demand,

reduction of power losses, and mitigation of the environmental impact of power generation and distribution.

For example, in 2021, the U.S. Green Building Council launched the Infrastructure Law's Grid Flexibility Program of worth USD 3 billion. The grid flexibility program involves investment in smart grid innovations, like grid-interactive energy-efficient buildings. It presents an opening for utilities, private enterprises, municipal bodies, and other stakeholders to implement state-of-the-art building solutions, with federal grants covering as much as 50% of the expenses.

Impact of COVID-19

The COVID-19 pandemic had a notable impact on the power transformer market, with distinct phases before and after the outbreak. Pre-COVID, the market was experiencing robust growth due to rapid urbanization, industrialization, and continuously increasing electricity demand. However, the pandemic disrupted supply chains and temporarily reduced demand from certain industries, causing obstructions. In the present post-COVID landscape, the power transformer market is rebounding. The demand for electricity gained traction, especially with the growth of renewable energy sources and the necessity to upgrade aging power infrastructure. Moreover, investments are focused on grid resilience, accommodating electric vehicles and data centers, aligning with government policies for energy sector sustainability and reliability.

Key Players Landscape and Outlook

The power transformer sector is experiencing swift progress, with prominent firms increasing their investments in smart meters and circuit breakers. Moreover, these companies are dedicating significant resources to enhance their market presence and profitability. They are proactively participating in collaborations, acquisitions, and partnerships, which are reshaping the industry's landscape and expediting overall market expansion.

In September 2023, Hitachi officially opened its state-of-the-art transformers factory in China. The facility stands amongst the largest, within the global network of Hitachi Energy's installations, showcasing its outstanding capabilities with the integration of the latest digital manufacturing technologies. The investment signified Hitachi Energy's commitment to satisfy the various demands of its customer base.

In December 2022, Siemens revealed its plans to deliver 175,000 smart meters and an

advanced distribution management system in Damietta, Nile delta. This order, placed by the North Delta Electricity Distribution Company (NDEDC), is a component of Siemens' grid modernization and enhancement initiative, with an estimated worth of around USD 42 million (equivalent to EUR 40 million).

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*Companies mentioned above DO NOT hold any order as per market share and can be changed as per information available during research work.

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