

North America Power Transformer Market to Hit USD 6,438.0 Million by 2030 – Astute Analytica

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/EINPresswire.com/ -- [North America power transformer market](https://www.astuteanalytica.com/request-sample/north-america-power-transformer-market) was valued at USD 3,723.4 Million in 2021 and is projected to reach US\$ 6,438.0 Million by 2030, registering a CAGR of 6.4% during the projection period.

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The main purpose of the power transformer is to receive low-voltage generating electric power and distribute it through distribution channels across the network of the power grid. It is an essential component of the electrical grid and aids in the uninterrupted transfer of power from one network to another.

Factors Affecting Market Growth

Rising electricity demand

The market is growing due to the sharp rise in the worldwide demand for electricity from rising nations boosting demand for power supply equipment. An increase in infrastructure construction activities might be ascribed to the increased demand for power in emerging nations. The U.S. consumes the most electricity per person due to the increased need for electricity from numerous industries, including the manufacturing, petrochemical, mining, and construction sectors.

Power transformer demand is growing due to government activities in North America nations to increase energy production, distribution, and transmission capabilities. Furthermore, the U.S. government's emphasis on the creation of renewable energy boosts industry growth. In 2021, the industrial sector consumed about 3.93 trillion kWh of electricity in the U.S.



Growing adoption of three-phase power transformers

Three-phase power transformers are ideal for electrical systems that require a balanced load and efficient power transmission capabilities. Three-phase power transformers are among the most often used equipment for delivering, generating, and distributing power in North America because of their many advantages, including low cost, low weight, greater efficiency, easy installation, and assembly.

Three-phase power transformers are used in commercial, industrial, and healthcare facilities because of their capacity to tolerate high voltage, rapid cooling systems, and multi-nodal integration systems. Because a single three-phase transformer is more potent and effective than three single-phase transformers, manufacturers prefer to utilize them.

In the U.S., there were 2100 high voltage transformers with a 345 kV rating in 2015, and in 2021, there were about 2400 more, primarily because there were more local development projects.

Market Trends

Rising construction of new projects in North America

The National Grid began work on the West Ashville substation project in the Town of Harmony, New York, in 2019. In the project, low voltage problems arose that would occur on the current electric transmission system when the local load increased rapidly. The current system was intended to be less stressed by the new substation.

In March 2021, NextEra Energy Transmission New York (NEETNY) developed a construction plan to update transmission lines in the counties of Niagara and Erie. In order to build 345 kV transmission lines, existing lines in the two counties require conversion across a distance of 32 kilometers (20 miles). The project's objective is to increase transmission capacity in order to help Western New York obtain more renewable hydropower.

Restraints

Power Transformers Programs are expensive

The primary materials used in the building of power transformers are steel, aluminum, and copper. Power transformers are becoming more expensive due to the rising costs of these raw materials, which limits their application in low- and middle-income nations. Power transformer costs are also rising as a result of COVID-19-related disruptions in the supply and distribution networks.

The short-term expansion of the market may be hampered by fluctuating raw material prices, greater installation and maintenance costs for power transformers than for existing power

distribution systems, and other factors. Over the course of the forecast period, it is also likely that a lack of high-quality electrical steel, the lengthy manufacturing and installation procedures for power transformers, and the high capital expenditure required for the construction of the supporting infrastructure will have a negative effect on the market.

Affect of COVID-19 on the North America Power Transformer Market

The COVID-19 pandemic had a detrimental effect on the expansion of the transformers industry. A major drop in the demand for electricity from the industrial and commercial sectors was the cause of this, which forced the cancellation of forthcoming power distribution projects and the postponement of those that were already underway.

In 2020, the pandemic had a significant effect on the U.S. energy industry. According to data from the U.S. Energy Information Administration (EIA), the nation's electricity usage fell by 4.6% in 2020. The findings show that the U.S. consumed 3,716 billion kWh less electricity in 2020 than it did in 2019, falling from 3,896 billion kWh. Government agencies and enterprises decided to temporarily halt their operations owing to the decision, which resulted in a 6% year-over-year decrease in electricity use from 2019 to 2020.

Segmentation Overview

Type Analysis

The three-phase transformer segment accounted for a major share of 85.9%. On the other hand, the single-phase transformer maintained a share of 14.1% in the North America industry. The increasing demand for three-phase transformers can be ascribed to several advantages, such as the need for less material and space due to their lightweight designs, which allow for the efficient functioning of large machinery. Their architecture consists of three groups of main and secondary coils, each wound around an iron core.

The power industry is being forced to create more economical options due to the increasing demand for electricity in the area. As a result, three-phase transformers are beginning to gain more popularity than single-phase transformers, which is causing the category to increase. From 2022 to 2030, the three-phase transformer market will present a US\$138.5 Mn opportunity. The single-phase transformer market has a US\$ 14.37 Mn opportunity throughout the same time frame.

Cooling Analysis

In 2021, the oil-immersed segment had a share of 57.8% in the North America power transformers industry. However, the dry-type segment acquired a share of 42.2%. The development of HVDC networks to satisfy the continually increasing demand for power is anticipated to become the primary factor influencing the expansion of the oil-immersed

transformer segment.

The use of oil-immersed transformers is likely to expand as power ratings and voltages rise, enhancing the segment's growth potential. The kVA-to-weight ratio, short-circuit resistance, and transport damage resistance of these transformers are all higher. As a result, it is anticipated that the segment will keep dominating in all of the nations considered.

Insulation Analysis

In 2021, the oil segment dominated the North America power transformer industry with a share of 33.9% and will mark significant growth over the prediction period. The expansion of the industrial and commercial sectors is likely to have a beneficial effect on the segment's growth, as is the region's economies' growing emphasis on constructing new substations to keep up with the region's large increase in electrical capacity and demand. Because mineral oil has characteristics like high thermal heating, oxidation endurance, cost-effectiveness, and availability of supply, the demand for transformer oil is likely to rise.

Rating Analysis

In 2021, the 101 MVA to 500 MVA segment accounted for a significant share of 37.8% in the market and will grow at the highest rate during the prediction period. The increased industrial demand for electricity has led to an increase in the need for power transformers in the 101 MVA to 500 MVA class. Demand is anticipated to rise as a result of a booming real estate market, expanding transformer usage in the processing industries, and infrastructure expansion. The increased investment in updating the current grid infrastructure and implementing smart transmission technology also supports the growth.

Application Analysis

In 2021, the industrial segment maintained a significant share of 42.3% and will continue growing over the prediction years. Power transformers are mostly used in the industrial sector. Power transformers are often employed in industrial and mining activities, civil construction, and other end-use applications to adjust the power distribution voltage levels. Due to the rise of the industrial sector, which includes activities like construction, operating power plants, and other things, it is expected that the use of power transformers will increase in the industrial sector at a CAGR of 7.3%.

Power transformer usage in the domestic sector is anticipated to increase in the near future due to the increase in residential properties in the area.

Energy Source Analysis

In 2021, the renewable energy segment carried a 40.6% share of the industry and will have

robust growth between 2022-2030. The power sector must work with more dependable sources due to changing energy needs and the quickly diminishing supplies of non-renewable power resources. As more and more countries transition to sustainable energy, renewable energy is swiftly moving to the top of the list of favored energy sources. More people than ever are using renewable energy, and this trend is anticipated to continue in the foreseeable future.

Distribution Transformer Analysis

Distribution transformers convert energy from a voltage level of 1 - 50 kV to a voltage level of 120 V + 1 kV based on the needs of the customer. Transformers used for distribution frequently have an energy efficiency of 96% to 99%. However, because of the large number of distribution transformers and their lengthy lifespans (30 to 40 years), even a small improvement in their efficiency could result in significant energy savings.

It is feasible to further increase transformer efficiency by switching out silicon steel cores for new varieties of magnetic core materials, such as amorphous ribbons. These materials are created via the quick solidification of a liquid alloy and have exceptional magnetic characteristics, including very little energy loss. These materials have a low saturation induction, however, and are thermally unstable.

Country Study

In 2021, the U.S. owned a significant share of 85.9% of the market for three-phase transformers in North America. Due to its high electricity consumption and expanding commercial and industrial operations, the U.S. is projected to continue to dominate during the forecast period.

Browse Detailed Summary of Research Report: <https://www.astuteanalytica.com/industry-report/north-america-power-transformer-market>

Competitors Landscape

The notable competitors in the North America power transformer market are:

General Electric Company

Triad Magnetics

Neeltran, Inc.

Pacific Transformer Corp.

Pico Electronics

MPS Industries, Inc.

Lenco Electronics

Siemens AG

Schneider Electric SE

Hitachi, Ltd.

Glen Magnetics, Inc.

ABB Ltd.

TBEA Co., Ltd.

Other Prominent Players

Segmentation Outline

The North America power transformer market segmentation focuses on Type, Cooling, Insulation, Rating, Application, Energy Source, and Country.

By Type

Single-phase Transformer

Three-phase Transformer

By Cooling

Dry Type

- o Self-Air

- o Air Blast

Oil Immersed

- o Self-Cooled

- o Water Cooled

- o Forced Oil

- o Others

By Insulation

Gas

Oil

Solid

Air

Others

By Rating

< 100 MVA

101 MVA to 500 MVA

501 MVA to 800 MVA

> 800 MVA

By Application

Residential & Commercial

- o Hotels

- o Hospitals

- o Societies

- o Others

Utility

Industrial

By Energy Source
Renewable Energy
o Solar
o Wind
Hydroelectric Energy
Nuclear Energy
Others

By Country
North America
o The U.S.
o Canada
o Mexico

Looking For Customization: <https://www.astuteanalytica.com/ask-for-customization/north-america-power-transformer-market>

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