



## Watts Happening: A Comprehensive Look at Americas Distribution Transformer Market

by Azhar Fayyaz- Analyst II- at PTR Inc.

- The demand for distribution transformers is expected to increase in the coming years globally as well as in the American region.
- The reasons for the growth of the distribution transformer market are the adoption of EV vehicles, installation of renewable energy generation plants, replacing aged electrical infrastructure, and investments in developing electrical infrastructure.
- To meet the increasing demand for transformers, different OEMs are expanding their facilities to cut down lead times and rely on local production rather than imported transformers.

The global demand of the [distribution transformer](#) market is on the rise. Countries around the world are developing electrical infrastructure that, in turn, fuels the demand of the distribution transformer. In the global market of distribution transformers, the percentage share of the Americas is around 28% by revenue. PTR estimates that the distribution transformer market is expected to grow globally with a CAGR of 5.4% from 2023-2027.

The increase in demand for the distribution transformer across the world is due to the adoption of EV vehicles in place of ICE vehicles and the increasing number of renewable energy generation plants. According to IEA (International Energy Association), utility-scale solar installed base is expected to increase from 742 GWs to 1335 GWs, experiencing a CAGR of 16% from 2023-2027, and the wind installed base is expected to increase from 1028 GW to 1532 GWs, experiencing a CAGR of 10% from 2023-2027. Moreover, the number of EVs sold globally is expected to rise from around 10 million in 2022 to 23 million in 2026. Due to these two factors, the distribution

transformer market will rise in the coming years. This article explores the reasons for the growth of distribution transformers market and the key trends in the transformer market, specifically in the Americas.

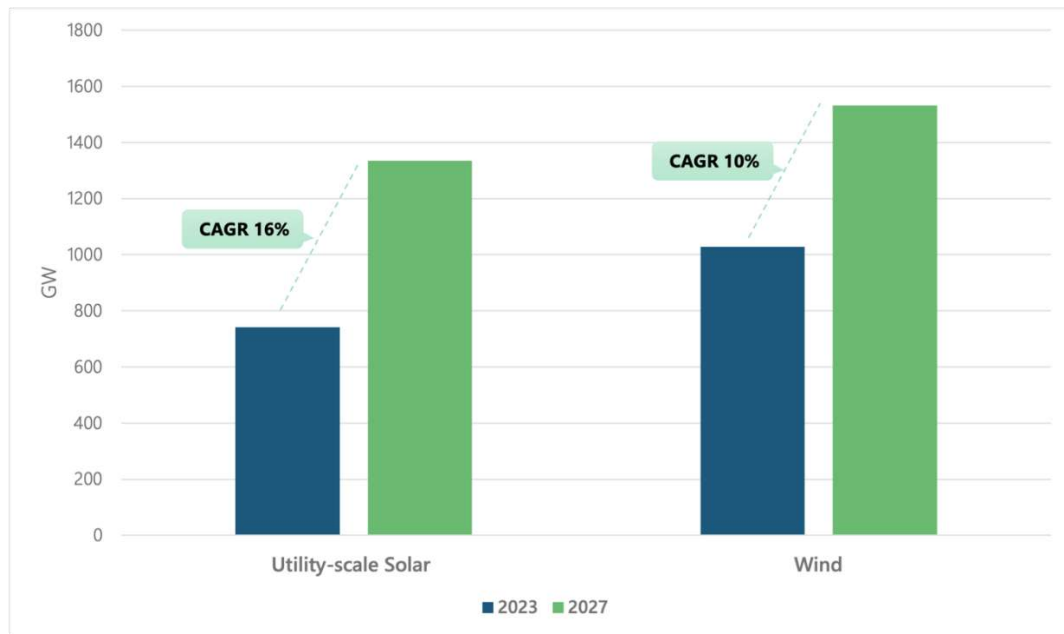


Figure 1: Expected CAGR of Utility-scale Solar and Wind Installed Base from 2023-2027.

Source: PTR Inc.

## Market Landscape of the Americas

The transformer market in the Americas is expected to grow with a CAGR of 5.7% by revenue from 2023-2027. In 2023, the US [distribution transformer](#) market generated a revenue of more than USD 3 billion, and the US market is expected to grow at a higher rate than the Americas from 2023-2027. Similarly, a lot of growth is happening in the distribution transformer market of Chile due to the ambitious goal of incorporating renewable generation plants, resulting in Chile having the highest revenue in South America from 2023-2027. The increase in the demand of the distribution transformer market in the US and Chile is expected to drive the market of the Americas.

## Growth Drivers in the Americas

There are a few reasons specific to the American region apart from increasing EV infrastructure and renewable energy generation that are causing the growth in demand for transformers. According to the US Department of Energy 2021 infrastructure review, ~70% of the transformers are 25 years or older. The aging of these components reduces their capacity to withstand physical stresses, consequently leading to increased failure rates. Almost ~2.1% of the total transformer fleet is retired annually. The replacement of the old transformers with new transformers will increase the demand in the near future.

Moreover, the investment from Biden Infrastructure Bill increases the electrical infrastructure of the US. Realizing that the country has an aging infrastructure, the US DoE has announced USD 10.5 billion in financing to support the upgrade and expansion of the US electric grid. The replacement of aged infrastructure and increased investments in expanding electrical infrastructure are the reasons for the growth of the transformer market in the US.

In South America, the privatization of a few utilities has increased investments in the electrical infrastructure. Brazilian power company Eletrobras expects to invest around USD16.92 billion over the next five years after privatization. This will lead to expanding electrical infrastructure in South America, which has a direct impact on the demand for distribution transformers.

## Key Trends in the Americas

As the distribution transformer market is on the rise, there are certain key trends developing in the industry. With the rise of underground electric networks due to weather-related issues, the demand for dry-type transformers is on the rise. Greenfield and brownfield projects are enhancing grid resilience by moving to underground infrastructure to mitigate climate change effects. Moreover, within this market, the voltage range of 1-17.5kV is notable, characterized by smaller average-size transformers. In the range of a few kVAs, these small-size transformer accounts for 50% of the market revenue. Additionally, the region is marked by the prevalence of single-phase pole-mounted transformers, emphasizing the importance of efficient distribution systems. However, there is a noticeable lag in digitalization at the distribution level, highlighting an area ripe for technological advancement and optimization in the utility sector. These key trends collectively illustrate the evolving landscape of the distribution transformer market.

## Manufacturing Scenarios

As the demand is rising, it is important to see if the manufacturing companies can provide transformers for the expansion of the electrical infrastructure. Notable players in the market are Hitachi Energy, Siemens Energy, GE, WEG, and Eaton.

Almost 25-30% of distribution transformers in the US are imported mainly from Mexico, Canada, and Taiwan. As a result of the increasing demand for transformers, OEMs are already working at full capacity. This has resulted in increasing lead times for transformers, including power, distribution, and dry-type transformers. To cater to the rising demand, industry players are expanding their construction facilities to meet the rising demand. [Hitachi Energy](#) announced in October 2022 to invest more than USD 37 million in expanding and modernizing its transformer manufacturing facility in South Boston and Virginia. Moreover, WEG opened its 5th factory in Washington in September 2021, dedicated to the production of transformers up to 10 MVA and voltage up to 46 kV. WEG also announced the expansion of its transformer business in Missouri in 2022. As the OEMs are expanding their facilities, the US aims to shift from imported transformers to local reserves.

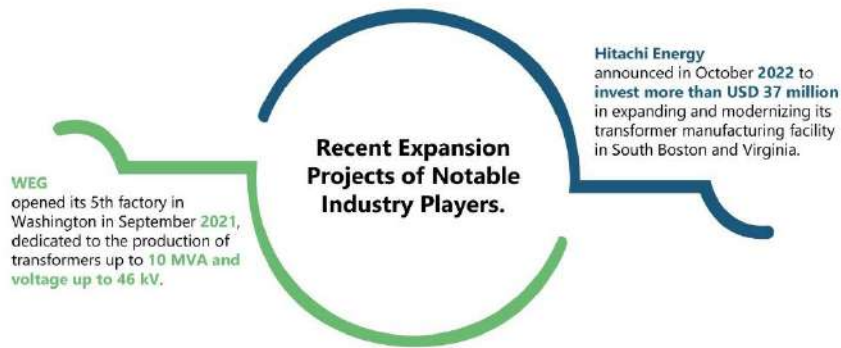


Figure 2: Recent Expansion Projects of Notable Industry Players.

Source: PTR Inc.

## Looking Forward

The distribution transformer market is bound to increase in the coming years globally. This upward shift in the global market is due to [EV](#) penetration and the building of renewable energy generation plants. The demand for the distribution transformer is increasing in America and the global market, but the increase in demand in America is due to more factors. In the US, the amount of investment in the electrical infrastructure is huge, with an aim to replace old transformers and expand new facilities through the Biden Infrastructure Bill. In South America, some of the utilities have been privatized, leading to huge investments in the electrical grid infrastructure.

As the demand is rising, there are several trends emerging in the distribution transformer market. The use of dry transformers for underground networks, categories for voltage requirement in the country, use of single-phase pole-mounted transformers in the Americas, and the potential to use digital transformers to secure the network are some key trends. To cater to increasing demand, industry players are looking to expand their facilities to meet the demand. All these developments show an upward trajectory for the distribution transformer market in the Americas for the years to come.

### Contact:

[sales@ptr.inc](mailto:sales@ptr.inc)