

October 2022

Public Power Distribution Transformer Demand Survey Summary

In August 2022, the American Public Power Association surveyed its members about distribution transformer supply and demand. We thank members for participating in this survey. This survey highlights the expanded nature of this problem subsequent to the results of two previous surveys we have done on this matter, beginning in November 2021. The data from the survey informed the Department of Energy and the Electric Subsector Coordinating Council of the severity of the supply chain distribution transformer shortage.

The results will inform government and industry near-term decision-making regarding potential government actions to alleviate distribution transformer shortages with appropriate urgency, including signaling to manufacturers that an increase in production is necessary to meet current and projected demand.

Participation

Ninety-five public power utilities serving a total of 6,719,596 meters responded to the survey.

Key Takeaways

- Production is not meeting current demand, as evident in the significantly growing lead times, lack of stock in yards, and the high number of project deferrals.
- Demand has grown consistently in the past and will continue to rise in the future.
- Many public power utilities are at a high risk of stocking out on transformers in 2022 or following one storm.

Current Production of Distribution Transformers Does Not Meet Demand

Between 2019 and 2020, demand across all voltage classes for distribution transformers rose 3.6% for public power survey respondents. During this period, the lead time to procure distribution transformers averaged two to three months.

Between 2020 and 2022, the number of distribution transformers purchased remained largely steady. However, beginning in 2021 and continuing into 2022, the number of distribution transformers available for purchase no longer meets the demand. Evidence for this imbalance can be seen in the significantly increasing lead times and the deferral of projects.

Lead Times

Between 2020 and 2022, average lead times to procure distribution transformers for all voltage classes rose 429% for public power respondents — from about two to three months pre-2021 to about 12 months in 2022. Some utilities reported being quoted lead times of more than three years.

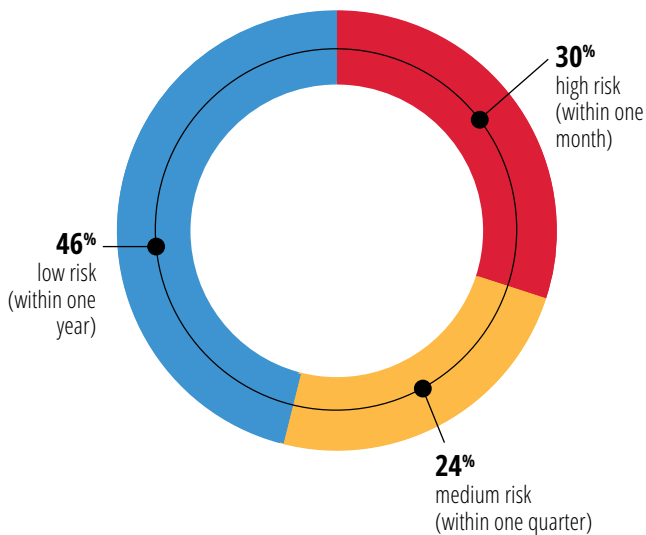
Deferred Projects

Many utilities are deferring or canceling infrastructure projects because they are unable to procure the additional distribution transformers required for these projects. Among public power utilities, **one in five projects were deferred or canceled.**

Transformer Shortages Pose an Urgent Threat to Reliability and Resilience

Most responding utilities reported low or near zero emergency stock, which is often used to recover post-disaster or to do infrastructure maintenance. Some public power utilities reported being within weeks of hitting the bottom of their distribution transformer stocks. In the event of a catastrophic hurricane or other natural disaster, the industry risks stocking out much sooner.

Public power utilities reported shockingly high risk of stocking out of at least one voltage class.



Demand for Distribution Transformers Will Continue to Grow

Survey participants reported steady growth in demand among all their voltage classes from 2019-2021. Economic forecasts anticipate that the calculated annual growth rate for distribution transformers in North America will be 9.1% for 2022-2030.¹ These growth projections are fueled by the fact that “renewable energy sources need significant changes in the infrastructure of energy generation and transmission, which has created new opportunities in the power transformer industry... The rise in the need for electricity across the globe, increase in adoption of smart grids and surge in replacement of existing transmission networks fuel the growth of the market.”²

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¹ Transformer Market. Global Market Insights, August 2022. <https://www.gminsights.com/industry-analysis/transformer-market>

² Kularni, Swamini. “Future of power transformers: Demand for smart transformers unlocks new opportunities.” Transformers Magazine. January 10, 2022. <https://transformers-magazine.com/tm-news/future-of-power-transformers-demand-for-smart-transformers-unlocks-new-opportunities/>