How Remanufactured Transformers Are Helping Companies Navigate Supply Chain Disruptions

by **Camden Spiller**

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Photo: Maddox Industrial Transformer

PERSPECTIVES

As supply chain disruptions continue to eat away at the global economy, companies are left searching for ways to navigate this crisis. The COVID-19 Pandemic of 2020 with its concurrent leash of restrictions and the growing labor shortage in the US have left the market in a bad way [1]. Near the end of 2021, *The Economist* concluded that a return to the "pre-covid years" was unlikely anytime soon as the world settled into an "era of predictable unpredictability" [2]. As this prevailing climate of uncertainty continues to shape and change the way companies operate, the desire for certainty and reliability in the procurement of goods and services remains as steady as it ever has, perhaps even more so in the face of such challenges.

In the transformer industry, new factory-built units are encountering unprecedented lead times due to material shortages with electrical grade steel and various other components. The relative scarcity of electrical grade steel is a problem further exacerbated by the new subsidies and incentives in the Inflation Reduction Act which will result in increasing amounts of the steel formerly available for transformer manufacturing now being allocated to electrical vehicle charging applications. These factors have put considerable pressure on the new transformer market. Utilities, electrical distributors, contractors, and project managers who have ordinarily been able to operate with a build-to-order mentality are having to rethink their sourcing strategy. Now, the procurement plumb line is shifting to an emphasis on the ability to adapt and think resourcefully, leading to a greater focus on readily available equipment that can be quickly fitted into a project's particular needs. This growing focus toward the innovative utilization of existing equipment is opening a wider berth for remanufactured transformers.

Transformer remanufacturing has existed as a niche industry since the early days of the technology's invention. The process has been performed by many groups over the years from small localized repair shops to large OEMs. Though the availability of remanufactured transformers is nothing new to the market, it provides four distinct advantages to help companies steer through the current supply chain dilemma.

The most obvious advantages to remanufactured transformers are their faster delivery times and lower upfront costs. With new factory transformer lead times out eighty plus weeks, in-stock, remanufactured transformers can be made available in as little as one to three weeks. Against the inflated cost of new factory-built units, remanufactured transformers offer a cost reduction between 10% and 40%.

Another benefit, equally worth noting is the reliability of remanufactured transformers. According to a study done by The Hartford Steam Boiler Inspection & Insurance Co. [3] the second leading cause of transformer failure stems from design & manufacturing issues. Such failures can be detrimental to project deadlines and incur a significant loss in revenue. Many such failures occur at initial energization. Purchasing a unit with a proven track record in the field provides an additional level of assurance for future reliability. In the same vein, the remanufacturing process includes identifying any previous design flaws and correcting and improving any defects for a longer service life. For this same reason, the warranty period for remanufactured transformers is often longer than new factory-built units.

From a fourth and broader perspective, purchasing remanufactured transformers helps alleviate an already bogged down supply chain. While recycling an electrically healthy transformer increases the availability of recycled materials for new products, it also increases the demand for the same product taken out of service, which now must be replaced. This cyclical manufacturing method cannot make room for the current industry demand. Utilizing remanufactured transformers reduces the overall product demand, which in turn brings relief to factories for the manufacture of new units. Remanufactured transformers also lower the high energy consumption and greenhouse gas emissions associated with new material manufacturing.

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References

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