

## Xcel Energy Distribution Transformer supply Mitigation Strategy – October 2022

Across the US and the World today, several significant events are creating global supply chain constraints impacting the regular supply of gas and electric materials to Utilities across the US. Almost everything necessary to operate and support Gas and Electric Utility construction & maintenance activities is negatively impacted. One of the most critical material items is distribution transformers, including single and 3-phase, pole, and pad mounts units, of which Xcel Energy requires approximately 24,000 annually sourced from 3 primary suppliers.

Since early 2020, a crescendo of significant adverse events has caused factory production lags, worldwide shipping problems, severe labor shortages, and finally, substantial raw material shortages that have impacted the traditional raw and finished goods/equipment supply chains, including:

1. The covid-19 pandemic created labor and shipping constraints and significant,
2. Catastrophic weather events, including hurricanes, Laura-2020, Ida-2021, and Ian-2022, required severely impacted production, and
3. War and civil unrest in Eastern Europe created raw materials shortages

Most recently, bright spots have started to appear as prices for raw materials have begun to decline; however, strong demand is now adding to the increased pressure on availability, costs, and lead time of finished goods going well into 2023.

To address the supply challenges, Xcel's Supply Chain and Distribution teams have collaborated to identify, develop, investigate, and action several ideas and opportunities to address the transformer supply and price inflation challenges to meet customer needs, including;

1. **Market Intelligence and Business Analytics (MIBA) Team** – To address supply challenges, Xcel's Supply Chain created a dedicated MIBA team to research macro-level supply market conditions, forecast industry trends, develop should-cost models, understand sub-component and raw material requirements, etc. The team develops insights into the supply of critical equipment and materials, including transformers, cable & wire, wood poles, etc.
2. **New Suppliers/Manufacturers:** Secured additional supply manufacturers that have capability and capacity to support increased demand.
  - Power Partners-US, GE-ProLec-Mexico, Southwest Electric-US, and VanTran Mfg.- US are additional, new supply manufacturers, approved by Engineering, with the capacity to begin delivering transformers in 2023.
3. **Specification Standardization:** Adopted broader industry standards and certified new manufacturing plants to increase the supply base.
  - **Specification standards** – partnered with an existing manufacturer, Howard Industries, on a change to an amorphous core steel design to shorten lead time, increase availability, and speed up production on several high-volume, high-demand units.
  - **Relaxed specifications** – Field-specific preferences, such as high profile units, etc., were relaxed in place of industry standard units of a more general design.