CASE STUDY

# Major North American Utility Secures Pad-mount Transformer Safety Supply With CEA's Supply Chain Management Service

## SCOPE

In response to the high demand for infrastructure upgrades and anticipated government policy changes, a leading North American utility sought to stockpile 10,000 pad-mount transformers by June 2024. These transformers are crucial for implementing underground transmission lines, essential for safety and preventing power outages during extreme weather events, such as hurricanes and winter storms. Faced with inflated quotes and extended lead times from multiple manufacturers, the utility turned to Clean Energy Associates (CEA) for a reliable solution.

## DETAILS

To meet the utility's ambitious procurement goal, CEA crafted a tailor-made supply chain management offering. Over the next three months, CEA evaluated 260 pad-mount transformer suppliers and distributors from around the world, applying the utility's following criteria:

- Exclusion of Chinese suppliers to minimize trade risks
- Capacity of 150-500 single-phase pad-mount transformers per month by June 2024
- ANSI Type 2, mineral-oil filled, self-cooled
- Companies with revenue exceeding $50 million USD

Furthermore, CEA conducted an in-depth analysis of factors influencing 2023's record-high transformer costs, including the prices of copper and aluminum, scarcity of electrical steel, and Transformer Price Index. The latter indicated an unprecedented surge in raw material prices, driven by increased demand from the electric vehicle (EV) industry and a shortage of skilled workers.

**CEA's customized supply chain market intelligence offering facilitated the utility's procurement goal of 10,000 pad-mount transformers by evaluating 260 manufacturers from around the world.**

CEA

2806 N. Speer Boulevard Denver, CO 80211 | cea3.com | Email: info@cea3.com

CEA's Supply Chain experts also identified key market drivers contributing to the pad-mount transformers' supply shortage:

1. **Demand for Safety:** Utilities burying cables underground for safety reasons (i.e., reduced risk of fire or electrocution) was a large reason for recent transformer price increases.
2. **Government and Utility-Driven Demand:** Global economic stimulus efforts have boosted investment in upgrading aging infrastructure, including transformers. Many local utilities in the US are quoting 36+ months for delivery of new medium and high voltage substation transformers.
3. **Supply Chain Disruptions:** Geopolitical tensions, the Russia-Ukraine War, COVID-19 pandemic, and trade disputes between the U.S. and China have significantly disrupted the availability of raw materials, components, and finished goods.
4. **Lack of Government Investment Incentives:** Limited government incentives and investment in building up transformer manufacturing capacity have contributed to a lack of available transformer suppliers.
5. **Labor Challenges:** Skilled labor shortages, with fewer individuals entering the blue-collar workforce, have led to a surge in transformer pricing.
6. **Policy Changes:** Utilities and Authority Having Jurisdictions (AHJs) have started to require cable burial, causing a shortage of pad-mount transformers. Additionally, restrictive U.S. import policies with China have created supply chain challenges.
7. **Raw Materials Constraints:** Materials commonly used in transformers, such as grain-oriented steel, aluminum, and copper, are experiencing a growing demand in various other industries, such as EVs, contributing to a shortage of raw materials.

## RESULTS

Out of the initial 260 manufacturers, 126 were disqualified based on origin, capacity, or product fit. CEA then shortlisted 13 potential partners from the U.S., Egypt, India, and South Korea. The supply chain report presented to the utility included detailed quotes, lead times, payment terms, warranties, ISO certifications, and available capacity.

Upon receiving CEA's comprehensive report and discussing the findings, the utility was able to move forward with confidence, choosing two new transformer manufacturers to build partnerships with to bolster its supply for the coming year.

## CEA's SUPPLY CHAIN ADVANTAGE

### Diversified Team

CEA's team is located across the globe which provides it with a competitive advantage by knowing the markets and seeing trends before they materialize in the United States.

### Unparalleled Experience

CEA has a skilled team of solar and storage professionals who have hundreds of cumulative years of industry experience and relationships in all facets of the supply chain.

### Soup-to-Nuts

CEA is the only full-service provider who can support your needs from pre-construction through post-inspection. By working with CEA's supply chain team, you will have a confidant to help you reduce risk and manage costs.