

Critical Electric Infrastructure and Supply Chain Constraints

- The reliability of the electric grid and the nation's economy are threatened by critically short supplies of distribution transformers and other critical electric infrastructure materials.
- The American Public Power Association (APPA) urges the Department of Energy (DOE) to utilize Defense Production Act (DPA) authorities to increase the production of distribution transformers. Congress should appropriate \$1.2 billion toward enhancing the domestic supply chain for the manufacture of electric grid components.
- APPA urges the federal government to work directly with manufacturers to identify short- and long-term solutions addressing the root causes of the distribution transformer shortage, as well as to encourage domestic production.
- Given the unprecedented demand and the constraints in production capabilities, APPA urges DOE to maintain current conservation standards for distribution transformers.

Background

Distribution transformers are essential for electric utilities to expand capacity, provide electricity to new communities, and restore service when existing infrastructure is damaged during a natural disaster. APPA surveys have shown that 80 percent of public power utilities have significantly lower inventories of distribution transformers than in 2018, and 30 percent reported a high risk of running out of stock in a month. Lead times to purchase new distribution transformers have grown from three months in 2018 to over two years or more today. Manufacturers indicate that a lack of skilled labor and materials are the cause of supply shortages.

Shortages of distribution transformers have caused public power utilities to defer or cancel one in five infrastructure projects that would require more resources than available. As the economy rebounds from the impacts of the pandemic, additional electric capacity is needed to power new residential and commercial development, new manufacturing facilities, and support a rapidly expanding electric vehicle fleet. Public power utilities are investing heavily in clean energy technologies to meet environmental goals.

Simultaneously, the industry is facing more frequent and severe extreme weather events, requiring more resource-intensive response and restoration.

To ensure supply chain constraints do not impact reliability, utilities are taking extraordinary measures to meet current demand with limited supply. That includes refurbishing older equipment and identifying swapping equipment in the field to generate spares from underutilized equipment. These are necessary, last-ditch efforts to protect the safety of electric customers and sustain other sectors that depend on electricity, but they move the industry further away from clean energy, efficiency, and affordability goals.

Even with a strong mutual aid program in place, for the first time, public power utilities are raising concerns that they may not have the stocks to share with other utilities following an extreme weather event or disaster.

Administrative and Industry Action

On June 6, 2022, President Biden authorized the use of the DPA to accelerate the domestic production of clean energy technologies. Specifically, the President authorized DOE to use the DPA to “rapidly expand American manufacturing of five critical clean energy technologies: photovoltaic modules and module components for solar panels; building insulation; heat pumps; equipment for making and using clean electricity generated fuels, including electrolyzers, fuel cells, and related platinum group metals; and critical power

grid infrastructure, such as transformers.” President Biden also authorized a “24-month bridge” temporarily freezing tariffs on solar panel imports from southeast Asian countries to meet U.S. electricity generation needs while domestic manufacturing ramps up. In September 2022, DOE issued a request for information seeking stakeholders’ input on how to use its authority under Title III of the DPA to address supply chain issues. APPA filed comments urging a focus on providing support to increase labor and material acquisition.

In a November 2022 letter to congressional appropriations committee leaders, APPA, the National Rural Electric Cooperative Association (NRECA), Edison Electric Institute, National Association of Homebuilders, Associated General Contractors, and Leading Builders of America requested \$1 billion toward DPA authorities to help address the distribution transformer supply chain crisis. Unfortunately, that year-end appropriations bill did not include this funding.

In its fiscal year 2024 budget, the Biden administration requested \$75 million to carry out “the President’s recent determinations under the Defense Production Act.”

APPA is pursuing every avenue to help increase the supply of distribution transformers. In May 2022, APPA and NRECA asked DOE Secretary Jennifer Granholm to temporarily waive the energy conservation standard for distribution transformers. APPA and NRECA believe that this could help manufacturers increase production. Unfortunately, DOE denied this request. In October 2022, APPA and NRECA also urged DOE to prioritize funding it received in the Inflation Reduction Act for DPA-related activities, to be directed specifically toward distribution transformers. DOE responded to the letter in June 2023, restating its assessment of the causes of the supply chain constraint and the need for Congress to appropriate money for it to address the issue under the DPA.

In December 2022, DOE issued a notice of proposed rulemaking (NOPR) to increase conservation standards for distribution transformers. In February 2023, APPA and a coalition of impacted industries sent a letter to Secretary Granholm requesting DOE reconsider its proposed energy efficiency standards because they do nothing to address the underlying supply chain constraint and will exacerbate the ongoing transformer shortage.

APPA also participated in a Supply Chain Tiger Team established by the Electricity Subsector Coordinating Council to address resiliency and security concerns arising from supply chain constraints. The association has set up a web service to facilitate a voluntary transformer exchange where APPA members can contact other members to address urgent equipment needs. In March 2023, APPA hosted a Supply Chain Summit to discuss issues unique to public power regarding critical grid components.

Congressional Action

Early in 2023, APPA and its member utilities took the lead in seeking support for bipartisan congressional letters to DOE, led respectively by Representative Dianna Harshbarger (R-TN) and Senator Hagerty (R-TN), requesting it reconsider efforts on transformer efficiency standards. In June 2023, Representative Richard Hudson (R-NC) and Senator John Barrasso (R-WY) introduced the Protecting America’s Distribution Transformer Supply Chain Act (H.R. 4167/S. 2036). This legislation would prohibit DOE from moving forward on its NOPR to increase conservation standards for distribution transformers over the next five years. H.R. 4167 was approved by the House Energy & Commerce Committee in December 2023. APPA strongly supports this legislation; at minimum, a delay of five years is needed to allow market production to catch up to demand.

Similar language to prevent DOE from using funding to move forward on the NOPR was included in the House Fiscal Year (FY) 2024 Energy and Water Development and Related Agencies Appropriations Bill, which passed the House in October 2023. The Senate FY 2024 Energy and Water Appropriations bill includes \$1.2 billion through 2026 to “enhance the domestic supply chain for the manufacture of electric grid components.” The funding is provided through several programs authorized under the Infrastructure Investment and Jobs Act (P.L. 117-58). This funding could help address identified labor and materials shortages. The committee report accompanying the bill also includes language raising concerns over the distribution transformer crisis and the impact it could have on reliability, resilience, and affordability.

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The American Public Power Association is the voice of not-for-profit, community-owned utilities that power 2,000 towns and cities nationwide. We represent public power before the federal government and protect the interests of the more than 49 million people that public power utilities serve and the 96,000 people they employ.