FACT SHEET

2023 NATIONAL TRANSMISSION NEEDS STUDY
UNITED STATES

The U.S. Department of Energy’s Grid Deployment Office (GDO) released the National Transmission Needs Study (“Needs Study”) in October 2023. The Needs Study is the Department’s triennial state of the grid report. It identifies transmission needs and provides information about current and anticipated future capacity constraints and congestion on the Nation’s electric transmission grid. In this fact sheet, we highlight the transmission needs across the United States. The Needs Study provides further detail on the benefits of transmission that could be realized throughout the country.

› Read the full study at: www.energy.gov/gdo/national-transmission-needs-study
› Contact GDO with additional questions: transmission@hq.doe.gov

HELPFUL LINKS

FINDINGS OF TRANSMISSION NEED ACROSS THE UNITED STATES

› **Improve reliability and resilience.** Nearly all regions in the United States would gain improved reliability and resilience from additional transmission investments. Some regions have acute reliability and resilience needs that additional transmission deployment can address.

› **Alleviate congestion and unscheduled flows.** Regions with historically high levels of within-region congestion—the Northwest, Mountain, Texas, and New York regions in particular—as well as regions with unscheduled flows that pose reliability risks—Califonia, Northwest, Mountain, and Southwest regions—need additional, strategically placed transmission deployment to reduce this congestion.

› **Alleviate transfer capacity limits between regions.** Historically, the data assessed show a need for transmission to alleviate transmission constraints that prevent moving electricity across the interconnection seams—between the Mountain and Plains regions and between Texas and all its neighbors (Southwest, Plains, and Delta regions). Similar needs are also found between the Plains and the Midwest and Delta regions, the Plains region’s two eastern neighbors.

› **Deliver cost-effective generation to meet demand.** Areas of several regions endure consistently high prices, most notably in New York, California, and the Plains, Midwest, and Mid-Atlantic regions. Additional transmission to bring cost-effective generation to demand in these high-priced locations would help lower prices.

› **Meet future generation and demand with additional within-region transmission.** The clean energy transformation, evolving regional demand, and increasingly extreme events must all be accommodated by the future power grid. Significant transmission deployment is needed as soon as 2030 in the Plains, Midwest, and Texas regions. By 2040, large deployments will also be needed in the Mountain, Mid-Atlantic, and Southeast regions.

› **Meet future generation and demand with additional interregional transmission transfer capacity.** The same power sector characteristics are also driving increased need in interregional transmission deployment. By 2040, there will be a significant need for new interregional transmission between nearly all regions.

*Wholesale market price data is limited for non-Regional Transmission Organization (RTO)/Independent System Operator (ISO) regions and capacity expansion modeling data is limited for Alaska and Hawaii. Absence of data does not necessarily indicate that there is no need for new transmission.*
**FINDINGS AT A GLANCE**

The proportion of overall transmission circuit-miles installed to address specific system reliability needs has grown with time, from 44% in 2011 to 74% in 2020.

There is an increasing need for both within-region and interregional transfer capacity by 2035 as consumer load and clean energy generation grows nationwide. These needs also grow with time.

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