

Consumer Cost Benefits of Electric Transmission

In 2022, the average household spent \$137 every month on electricity¹— a stressor on top of the rising costs of basic necessities. **More than a quarter of Americans face high energy burdens**, meaning they spend more than 6% of their annual income on heating and cooling.²

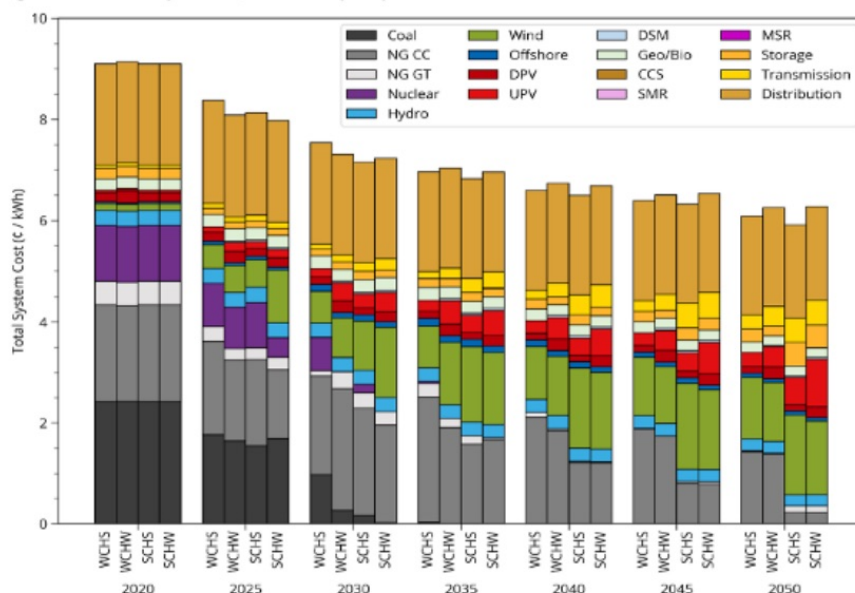
The U.S. has rich energy resources, but the **fragmented nature of its electric grid limits the ability to move power freely across long distances**. Building more transmission capacity to carry energy to where it's needed most will give American consumers greater access to cheaper energy resources. A more interconnected grid also ensures communities can import extra power to prevent sudden price spikes during extreme weather events.

More Transmission, Lower Costs

Grid operators rely on transmission lines to access the cheapest electricity on the market. But when there is not enough capacity on those lines, customers are forced to purchase from more costly generation sources. These added expenses — known as congestion costs — surged 56% between 2021 and 2022, underscoring the need to substantially boost transmission capacity.³

In particular, building long-haul interregional transmission will help us tap into cheaper wind and solar resources, even if they're located far from load centers. A 2020 ACEG analysis found that investing in transmission could **reduce the average household's electricity bill by \$300 each year**,⁴ even when taking into account the cost of building new power lines.⁵ Although capital costs for energy infrastructure construction are typically allocated to the consumers who most benefit, transmission more than pays for itself.

Figure 5: Retail rates by scenario, broken out by component



A typical energy bill is divided into three parts: generation, transmission, and distribution, with transmission making up just a small fraction.

While expanding the grid may increase the percentage made up by transmission costs — though likely to no higher than 3.6% of the total — the resulting increased access to cheaper power will decrease generation costs and lower the overall electricity bill. [Source: [Click](#)]



Preventing Price Spikes During Severe Weather

Severe weather events, like heat waves and winter storms, often cause electricity demand — and, as a result, electricity prices — to spike. Transmission ties within and between regions allow grid operators to bring in power from outside the storm event where prices are more stable.

During Winter Storm Elliott, for example, communities in the Southeast experienced rolling blackouts due to unprecedented demand. Utilities like the Tennessee Valley Authority (TVA) depended on transmission to import power from their neighbors in the Midwest and Central regions.⁶ The transmission network, however, was “stretched to its limits,” according to post-storm analysis. As a result, **affordable power went to waste while others sat in the dark.**⁷

Subsequent research has found that during Elliott, just one additional gigawatt of interregional transmission between TVA and the Midwest Independent System Operator (MISO) would have yielded **\$79 million in savings.**⁸ The benefits are similarly impressive across other recent storms.

Potential savings from new transmission were higher in 2022 than at any point in the previous decade, in large part because of extreme weather.⁹

Transmission investment more than pays for itself.

Long-distance lines cost approximately \$700 million to build per gigawatt of capacity. The money saved during these storms can balance out, or even exceed, that expense.¹⁰

| Project | Development Costs | Consumer Savings |
|--|-------------------|--|
| Grain Belt Express | \$7 billion | Projected to save customers in Kansas, Missouri, and Illinois \$11.3 billion over 15 years |
| Empire State Line | \$180 million | Projected to save consumers in western New York approximately \$230 million over 20 years by reducing congestion |
| CleanPath NY | \$11 billion | Projected to save New Yorkers up to \$9.9 billion in avoided system costs |
| SOO Green | \$2.5 billion | Projected to save ratepayers approximately \$2 billion over 20 years thanks to reductions in wholesale electricity prices |
| MISO Long-Range Transmission Portfolio Tranche 1 | \$10.3 billion | Projected to produce \$37 billion in “benefits,” which include congestion and fuel savings, avoided capital costs of local resource investments, and avoided transmission investment from efficient planning |

1. U.S. Energy Information Administration, “US Electricity Profile 2022,” (November, 2023).

2. Dreobl, Ariel, et al, “How High Are Household Energy Burdens? An Assessment of National and Metropolitan Energy Burden across the United States,” (September, 2020).

3. Doying, Richard, et al, “Transmission Congestion Costs Rise Again in U.S. RTOs,” (July 2023).

4. Clack, Christopher T.M., et al, “Consumer Employment, and Environmental Benefits of Electricity Transmission Expansion in the Eastern U.S.” (October, 2020).

5. *Ibid.*

6. Massie, Ashtin and Sarah Toth, “Wasted Wind and Tenable Transmission during Winter Storm Elliott,” (February, 2023).

7. *Ibid.*

8. Goggin, Michael and Zachary Zimmerman, “The Value of Transmission During Winter Storm Elliott,” (February, 2023)

9. Lawrence Berkeley National Laboratory, “The Latest Market Data Show that the Potential Savings of New Electric Transmission was Higher Last Year than at Any Point in the Last Decade,” (February, 2023)

10. *Ibid.*