Methodology for Estimating Changes in Residential Electricity Rates in Congressional Districts

This document describes Co-Equal's methodology for estimating year-over-year changes in average residential electricity rates between October 2024 and October 2025. The methodology draws on data from the U.S. Energy Information Administration (EIA), the U.S. Census Bureau's American Community Survey (ACS), and the Missouri Census Data Center.

Estimating Changes in Residential Electricity Rates

The analysis follows a three-step process to allocate utility-level data to congressional districts and calculate rate changes.

The first step assigns utility-level data to counties. EIA's Form 861M reports electricity data for each utility's entire service territory, which often spans multiple counties.[1] To distribute each utilities' data geographically, the methodology uses EIA's utility-to-county crosswalk – a file that identifies which counties each utility services.[2] The following totals are allocated to each county: residential retail sales (total revenues from residential customers), megawatt hours of sales to residential customers (total electricity delivered to residential customers), and the number of residential customer accounts. These totals are allocated proportionally based on each county's share of population within the utility's service territory, as reported in the ACS.[3] For example, if a utility serves two counties and 60% of the households in its service territory are in County A while 40% are in County B, then 60% of that utility's revenues and megawatt hours are assigned to County A and 40% to County B. In counties served by multiple utilities, the county totals equal the sum of allocations from each utility.

The second step allocates these county-level totals to congressional districts. Because congressional districts do not align perfectly with county boundaries, the methodology distributes county-level totals to districts based on the share of each county's population that

---

[1] U.S. Energy Information Administration, *Form EIA-861M (Formerly EIA-826) Detailed Data* (updated December 23, 2025) (https://www.eia.gov/electricity/data/eia861m/).

[2] U.S. Energy Information Administration, *Annual Electric Power Industry Report, Form EIA-86 Detailed Data Files, Service_Territory_2024.xlsx* (October 7, 2025) (https://www.eia.gov/electricity/data/eia861/) (utility-to-county crosswalk).

[3] U. S. Census Bureau, *American Community Survey, 2022 American Community Survey 5-Year Estimates*.

reside in each district. These shares are calculated using the Missouri Census Data Center's crosswalk for the 119th Congress.[4]

The final step calculates district-level rates and changes. Once revenues and megawatt hours have been allocated to each district, the average residential retail rate is calculated as total revenues divided by total megawatt hours. This calculation is performed twice – once for October 2024 and once for October 2025. The year-over-year percentage change equals the October 2025 rate minus the October 2024 rate, divided by the October 2024 rate.

Estimating Changes in Annual Household Electricity Costs

The analysis estimates the change in annual electricity costs for a typical household in each congressional district. This calculation combines the district-level rate changes described above with state-level data on household electricity consumption.

Household electricity consumption varies significantly across states. To account for this, the methodology uses state-level average monthly consumption data from the Energy Information Administration's 2024 Average Monthly Bill report, which is derived from the EIA's Form EIA-861 data. [5]

The estimated change in annual household electricity costs equals the district's change in residential electricity rates (in dollars per kilowatt-hour) multiplied by the state's average monthly household consumption (in kilowatt-hours), multiplied by 12 and rounded to the nearest dollar.

This calculation assumes that household electricity consumption is uniform across all districts within a state and that consumption remains constant over time. It also assumes that the year-over-year rate change observed in October persists throughout the year. Actual changes in household electricity bills may differ due to seasonal variation in rates and consumption, as well as differences in consumption patterns across households and districts.

Limitations

The estimates presented in this analysis represent average residential electricity rates in each congressional district and do not necessarily reflect the change in any individual household's monthly utility bill. Actual bills depend on factors specific to each customer, including their

---

[4] Missouri Census Data Center, *Geocorr 2022: Geographic Correspondence Engine* (October 2022). (https://mcdc.missouri.edu/applications/geocorr2022.html).

[5] U.S. Energy Information Administration, *2024 Average Monthly Bill-Residential* (https://www.eia.gov/electricity/sales_revenue_price/pdf/table_5A.pdf)

usage patterns, their utility's rate structure, and applicable taxes and fees. Additionally, many customers pay state and local taxes or franchise fees, which are not reflected in the EIA data. As a result, actual cost changes for individual households may be higher or lower than the district averages estimated here.

Rate changes could not be calculated for 11 congressional districts in Texas due to incomplete data in the EIA's utility-to-county crosswalk file.

EIA's monthly 861M data is based on a sample of electric utilities rather than a complete census. Utilities not included in the monthly sample are reported as statewide "adjustments," which represent the combined activity of all non-sampled utilities in each state. This methodology excludes the totals reported as statewide adjustments from the calculation of district electricity rates. These adjustments are larger in states with "retail choice" programs that allow customers to purchase power from a different supplier than the utility that delivered the power.[6]

Finally, the 861M data used in this methodology reports gross electricity sales and does not account for credits that customers with rooftop solar systems receive through net metering arrangements.

[6] Retail choice states include: California, Connecticut, Delaware, Illinois, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Texas, and Washington, DC. *See*, U.S. Energy Information Administration, *Can Electric Utility Customers Choose Their Electricity Supplier?* (https://www.eia.gov/tools/faqs/faq.php?id=627&t=3).