Oklahoma Electricity Prices

Decomposition of Price Changes: 2020-2025

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REGIONTRACK
Regional Economic Forecasting and Analysis

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Introduction

The period since 2020 marks a structural turning point for electricity markets in Oklahoma and across the United States. After more than a decade of relative price stability, electricity costs accelerated sharply while demand growth reemerged in several states, often associated with the expansion of large data centers and other data-intensive commercial activity. Oklahoma has experienced both developments simultaneously: rising national price pressures alongside one of the fastest rates of electricity demand growth in the country.

This report examines how electricity prices and sales evolved in Oklahoma between 2020 and 2025 and considers the implications for competitiveness, affordability, and long-term rate design. Using electricity price data from the U.S. Energy Information Administration (EIA) and a four-part shift-share framework, the analysis separates national price pressures from state-specific dynamics and identifies the sectors and utilities shaping recent outcomes.

Four structural developments define Oklahoma's electricity market since 2020. First, electricity prices increased rapidly nationwide following the pandemic and Winter Storm Uri. Second, Oklahoma preserved its electricity price competitiveness despite these national pressures. Third, electricity demand growth accelerated sharply in the state and was concentrated in the commercial sector, particularly within the service territories of the state's largest utilities. Fourth, price outcomes diverged substantially across utility service territories, with PSO customers experiencing nearly double the rate increases of OG&E customers.

The analysis that follows examines how these forces interacted to shape electricity price and demand outcomes in Oklahoma during the 2020–2025 period.

Key Findings

Five findings summarize the key forces shaping electricity prices and demand in Oklahoma since 2020.

First, national cost pressures drove most electricity price increases after 2020, but Oklahoma's electricity prices rose less than the national average.
Between 2020 and 2025, average electricity prices increased across the United States by 28.7%. In Oklahoma, prices rose 24.5% over the same period. Although the state experienced significant post-pandemic price volatility – including the effects of Winter Storm Uri – its cumulative increase remained below the national average. By 2025, Oklahoma ranked as the second lowest-cost electricity state in the country.

Shift-share analysis confirms that most of Oklahoma's price increase reflects national effects: fuel costs, wholesale market conditions, general inflation, and other broad forces. Oklahoma's total price rose about 0.32 cents per kilowatt-hour (kWh) less than national trends alone would have implied. That moderation reflects sector-specific pricing outcomes within the state rather than structural differences in customer mix.

Second, low commercial electricity prices – and the widening gap between Oklahoma and national commercial rates – are the primary source of the state's relative price advantage. While national price increases were broadly similar across residential, commercial, and industrial users, Oklahoma's experience diverged.

The shift-share decomposition shows that the commercial sector accounts for the majority of Oklahoma's aggregate price moderation relative to the nation. While moderated commercial electricity prices strengthen Oklahoma's economic competitiveness, the divergence between commercial price growth and price increases in residential and industrial classes also raises important policy questions regarding cost allocation and rate equity.

It is also important to note, however, that Oklahoma's price cycle during this period differed from the national pattern. Following Winter Storm Uri, electricity prices in Oklahoma increased sharply and at a faster pace than national averages as extraordinary fuel costs flowed through retail rates. In subsequent years, however, Oklahoma prices softened relative to the nation, reversing much of the earlier divergence. The resulting pattern

suggests that Oklahoma's initial price response may have overshot the longer-run price path before stabilizing later in the period.

Third, electricity demand growth in Oklahoma has been extraordinary – and highly concentrated.

From 2020 to 2025, the quantity of Oklahoma electricity sales increased 20.6%, more than double the national growth rate of 9.2%. Nearly three-fourths of this increase occurred in the commercial sector, where usage expanded 48% – three times the national commercial growth rate.

Shift-share analysis confirms that more than half of Oklahoma's load growth reflects state-specific competitive effects rather than national demand trends. Commercial expansion alone accounts for roughly 70% of total load growth and nearly half of Oklahoma's divergence from national demand patterns.

Utility-level data show that this commercial expansion is concentrated heavily within OG&E's service territory, where commercial sales now approach half of total load. This structural shift in usage composition is central to understanding future infrastructure and rate design questions.

Fourth, demand growth and price outcomes have diverged across customer classes.

Oklahoma's recent experience presents a notable asymmetry:

- Demand growth has been concentrated overwhelmingly in the commercial sector.
- Price increases have been concentrated in residential and industrial classes.
- Commercial rates have risen far more slowly despite rapid expansion in commercial load.

This divergence in pricing does not, in itself, establish subsidization of commercial usage by residential and industrial customers. The price data reflect average revenues per kilowatt-hour rather than underlying cost-of-service determinations and therefore cannot reveal whether any class is paying more or less than its attributable cost.

However, the combination of rapid commercial load growth and comparatively modest commercial price increases raises legitimate forward-looking policy questions. Sustained expansion in commercial demand – particularly from large energy-intensive facilities – can require significant investment in generation, transmission, and fuel procurement. How those costs are allocated will shape residential affordability, industrial competitiveness, and the durability of Oklahoma's commercial price advantage.

Fifth, the costs of Winter Storm Uri remain embedded in electricity rates and ongoing policy decisions.

Although securitization smoothed the immediate impact of extraordinary 2021 fuel costs during Winter Storm Uri, deferred bond repayment obligations will remain embedded in monthly customer bills over decades. Oklahoma utilities collectively issued approximately $3.1 billion in ratepayer-backed securitization bonds to finance storm-related expenses, with PSO issuing approximately $725 million and OG&E approximately $800 million. These long-term financing obligations will continue to influence electricity rates for decades. Prices used in the report capture current billed rates but do not fully reflect the long-run economic cost of storm-related financing. Oklahoma's price competitiveness therefore exists alongside long-term recovery charges that will continue to influence electricity rates.

These storm cost recovery strategies contributed to substantial price divergence across utility service territories. PSO customers experienced a 47.8% rate increase between 2020 and 2025 – nearly double the statewide average and far exceeding OG&E's 25.3% increase despite OG&E issuing more in bonds. This divergence reflects differences in cost recovery timing, customer composition, regulatory treatment, and the allocation of extraordinary fuel costs following Winter Storm Uri.

Policy Implications

The report's findings suggest that Oklahoma has, thus far, balanced rapid demand expansion with preserved price competitiveness. However, that balance rests on several policy choices.

1. **Cost Allocation and Rate Design**
   If commercial growth continues at elevated levels, regulators will face important decisions regarding how new infrastructure costs are allocated. Concentrating more costs within the expanding commercial load segment could preserve residential and industrial affordability. Conversely, broader cost sharing of commercial expansion could moderate commercial rates but would increase household and industrial cost burdens.

2. **Residential Affordability**
   Residential rates have increased nearly 30% since 2020 and now rank less favorably than commercial and industrial rates relative to other states. Ensuring household affordability – particularly during periods of fuel volatility – should remain central to the policy efforts of the state's regulatory authorities.

3. **Industrial Competitiveness**
   Industrial prices remain low in level terms but experienced the largest percentage increase among the major user groups since 2020. Given Oklahoma's reliance on energy-intensive industry, continued attention to fuel cost exposure and rate stability is warranted. The degree to which rising industrial prices enabled relatively small increases in commercial rates remains a policy concern.

4. **Sustainability of Commercial Advantage**
   Oklahoma's commercial rate performance is a core competitive asset from an economic development viewpoint. The sustainability of that advantage will depend on disciplined infrastructure planning, transparent cost recovery, and alignment between economic development strategy and rate design. It must also be balanced against legitimate rate equity concerns.

5. **Service Territory Variability**
   The divergence in price across the state's electric utilities suggests that territory-level outcomes may increasingly influence investment decisions and customer impacts. Regulatory consistency and clarity will be important in maintaining statewide competitiveness.

In sum, Oklahoma entered the post-pandemic period with a strong electricity price position just as the United States was entering a broader period of inflation and rapidly rising electricity prices. Although the state experienced significant volatility following Winter Storm Uri – including a sharp early increase in electricity prices – Oklahoma ultimately preserved its relative price advantage while recording one of the fastest rates of electricity demand growth in the nation. Much of that growth has been concentrated in the commercial sector, where electricity prices increased far more slowly than for residential and industrial customers. At the same time, a portion of the cost shock from Winter Storm Uri was deferred through securitized storm debt that will remain embedded in electricity rates for decades. As a result, Oklahoma's future electricity performance will depend less on national fuel cycles and more on state-level decisions. How the state manages the interaction between rapid commercial expansion, long-term storm cost recovery, infrastructure investment, and equitable rate design across customer classes will determine whether Oklahoma maintains its competitive advantage while ensuring affordability across all customer segments.

Measuring Electricity Prices

Because this report focuses on electricity price movements across states, sectors, and utilities, it is important to understand how the underlying price series is constructed. All electricity prices used in this analysis are derived from the U.S. Energy Information Administration's (EIA) Form EIA-861 survey of electric utilities.

The survey collects information from electric utilities on retail electricity sales to ultimate customers by major user class – residential, commercial, industrial, and transportation. Prices are reported at the national and state levels and for most individual electric utilities. Monthly data (Form EIA-861M) are available for a sample of utilities with relatively short reporting lags, while more comprehensive data covering nearly all utilities are released annually but with a longer lag.

Utilities report two key measures for each customer class: total electricity sales in kilowatt-hours (kWh) and the total revenue received from those sales. **Average electricity prices are calculated as total revenue divided by total electricity sales within each class.** These values represent average revenue per kilowatt-hour, which serves as the standard measure of retail electricity prices in EIA data.

Some portions of the analysis in this report rely on annual prices. Because electricity consumption is highly seasonal, annual prices are not calculated as simple averages of monthly prices. Instead, **annual prices are constructed as total billed revenue received during the year divided by the total quantity of electricity delivered during the year.** This approach produces a sales-weighted annual average price that accurately reflects the effective price paid by customers over the full year.

Effect of Winter Storm Uri[1]

The report focuses primarily on trends in electricity prices during the 2020-2025 period. A key consideration in interpreting electricity price data during this time is the impact of Winter Storm Uri in February 2021. The storm placed extraordinary strain on the regional electric grid and triggered an unprecedented surge in the price of natural gas – the primary fuel used for electricity generation in Oklahoma and a major fuel for residential and commercial space heating in the state.

Shortages of the fuel due to the severity of the storm pushed natural gas prices to record highs during a two-week period. Major Oklahoma utilities – primarily Oklahoma Gas & Electric (OG&E), PSO, Oklahoma Natural Gas (ONG), and Summit Utilities (formerly CenterPoint[2]) – were exposed to significant financial distress from the spike in fuel costs after paying some of the highest natural gas prices in U.S. history. Spot market prices exceeded $1,000 per thousand cubic feet (mcf) at peak levels. The event left utilities with approximately $2.8 billion in extraordinary fuel costs.

In response, the Oklahoma Legislature enacted Senate Bill 1050, authorizing securitization of storm-related costs and other mitigation responses.[3] The Oklahoma Corporation Commission (OCC) subsequently took three steps: 1) approved utility rate increases, 2) authorized bond issuances[4] to cover unexpected fuel costs, and 3) allowed the use of long-term "winter event securitization" charges to customer bills to repay those bonds over as many as 28 years.

Utilities have already begun collecting designated recovery charges on customer bills and significant bond offerings have been issued.[5] Total bonds issued to date are estimated at $3 billion – $1.45 billion for Oklahoma

[1] https://oklahoma.gov/occ/divisions/public-utility/consumer-services/deep-freeze-2021-faq.html
[2] The OCC approved the sale of Houston-based CenterPoint's assets in Oklahoma, Arkansas, and Texarkana, Texas, to Summit Utilities, a Colorado-based subsidiary of Southern Col Midco, on Nov. 16, 2021. The sale closed on Jan. 10, 2022, the Arkansas Public Service Commission announced. See: https://www.southwestledger.news/news/2021-winter-storm-uri-bonds-total-approximately-45b-0
[3] See the state legislation at: https://law.justia.com/codes/oklahoma/2016/title-74/section-74-5062.6/. Additional details on the bond issue are available at: https://www.okutilitybonds.com/oklahoma-utility-securitization-bonds-ok/about/i4867
[4] https://journalrecord.com/2026/02/19/oklahoma-rules-lawmakers-appeal-utility-rate-hikes/
[5] https://www.okhouse.gov/posts/news-20250821_1

Natural Gas Co. (ONG), $800 million for Oklahoma Gas & Electric Co. (OGE), $725 million for Public Service Co. of Oklahoma (PSO), and $95 million for Summit Utilities (formerly CenterPoint).[6] However, once interest and financing costs are included, filings in ongoing litigation[7] before the Oklahoma Supreme Court suggest that the total deferred repayment obligation could reach nearly $5 billion.

It is important to note for the purposes of this report that nearly half of the total bond indebtedness is due to ONG and Summit Utilities to cover unexpected costs for natural gas provided to gas customers, not electricity customers. **Only the costs incurred by OGE and PSO are expected to affect electricity prices in the state**. This indebtedness tied to electricity provision, however, still totals approximately $1.5 billion.

Implications of Uri for Electricity Price Measurement

The deferred nature of the bond repayment structure creates an important measurement issue. EIA electricity price data reflects revenue actually collected from customers through traditional monthly billing, including approved rate increases and certain recovery riders already in place. However, the EIA survey does not incorporate the full stream of deferred securitization charges that will be collected over the next several decades.

That cost is now being spread across multiple decades. Reports suggest that a typical OG&E residential electricity customer will pay more than $2 per month for 28 years to retire OG&E's bonds. A typical PSO residential electricity customer will pay approximately $4 per month for 20 years.

Because these future payments represent costs incurred during the 2021 event but spread over time, **EIA electricity prices for Oklahoma reflect the market prices actually paid but will understate the full economic cost of electricity associated with the storm**. For context, the $1.4 billion in bonds issued by OG&E and PSO equals roughly 20% of current statewide annual retail electricity sales and about 25% of 2021 sales.

To the degree that storm-related charges are already being incorporated into monthly bills, current rates capture some of the realized increase in cost over time, although the initial post-storm adjustments appear to have temporarily exceeded the longer-run cost recovery required under the securitization structure. The 27% surge in Oklahoma electricity-sector revenue in 2022 shown in Figure 1 captures much of the immediate revenue realized in the aftermath of the storm.

The magnitude of this initial revenue increase also suggests that short-term cost recovery may have temporarily exceeded the longer-run path of storm-related costs. In other words, the immediate price response following Winter Storm Uri appears to have overshot the level ultimately required to finance the securitized storm obligations. The subsequent decline in statewide electricity revenue in 2023 is consistent with this interpretation, as electricity prices and revenues softened relative to the initial post-storm surge.

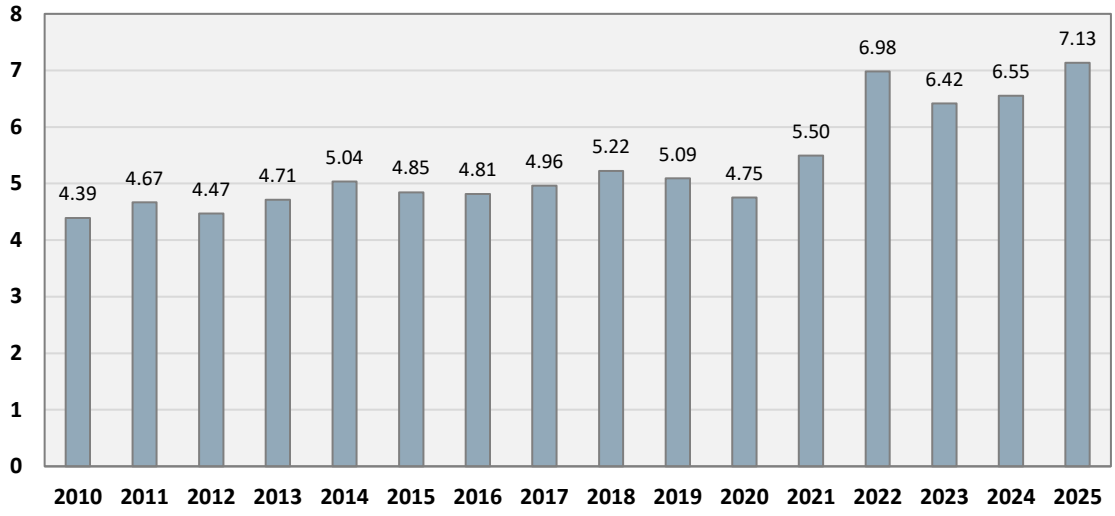
Total state electricity revenue subsequently declined 8% in 2023 and returned the sector closer to the long-run trend in revenue growth that prevailed prior to 2020.

Despite the electricity market disruptions caused by Uri, our evaluation of the data suggests that EIA prices accurately capture the monthly payments customers are making for electricity in Oklahoma. While pricing errors are always possible, EIA price data provide a useful and reliable measure of retail electricity prices actually paid by customers.

[6] https://www.southwestledger.news/news/2021-winter-storm-uri-bonds-total-approximately-45b-0
[7] https://www.oscn.net/dockets/GetDocument.aspx?ct=appellate&bc=1062686746&cn=CU-122861&fmt=pdf

Figure 1. Oklahoma Utility Electricity Revenue from End Users

Billions of dollars annually



Source: U.S. Energy Information Administration Form EIA-861 and RegionTrack calculations

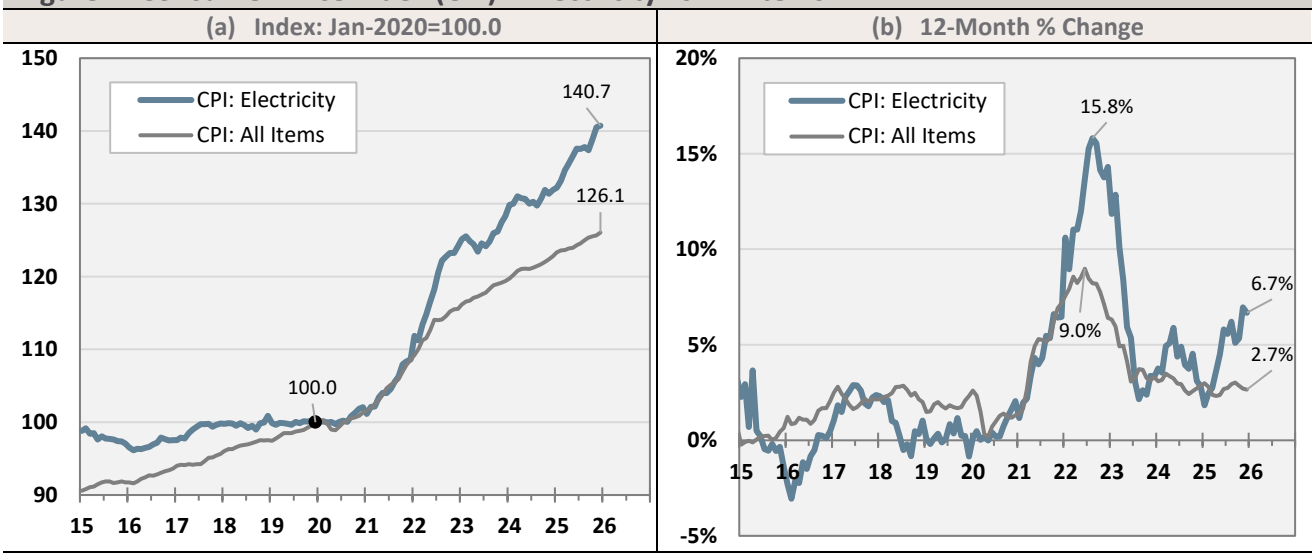
Rising U.S. Electricity Prices

The first area of analysis in this report illustrates the emergence of concerns over rising electricity prices nationally and in Oklahoma since 2020. Prior to the onset of the pandemic in early 2020, U.S. electricity prices were in a prolonged period of relative stability and were increasing much more slowly than the overall price level (*see Figure 2a*). **From 2015 through 2019, electricity prices declined by nearly 10% relative to the broader U.S. price level**, reflecting flat nominal electricity pricing in an environment of modest overall inflation. As a result, concerns over rising electricity costs were minimal among both households and the business sector during this period, and electricity prices were not widely viewed as a source of economic strain or policy risk.

Overall U.S. Inflation Surge

This pattern shifted sharply following the onset of the pandemic. After overall inflation remained subdued at 1.3% in 2020, the U.S. economy entered a period of pronounced inflationary pressure (*see Figure 2b*). Measured over the year, overall consumer prices surged by 7.2% in 2021 and 6.4% in 2022, before easing to 3.3% in 2023, 2.9% in 2024, and 2.7% in 2025.[8] Overall U.S. inflation measured over the year peaked at 9.0% in June of 2022 (*see Figure 2b*).

Figure 2. Consumer Price Index (CPI) – Electricity vs. All Items



Source: U.S. Energy Information Administration Form EIA-861 and RegionTrack calculations
Notes: Consumer price index for all items urban consumers, seasonally adjusted

U.S. Electricity Price Surge

Electricity prices initially moved broadly in line with this inflationary surge but then diverged materially from the overall price trend. After remaining relatively flat through 2020, U.S. electricity prices increased by 6.4% in 2021, closely tracking the acceleration in overall inflation. In 2022, however, electricity prices accelerated sharply, rising by 14.3% – more than double the increase in the overall CPI. Electricity price increases reached a peak of 15.8% measured over the year in mid-year 2022. Price pressures quickly moderated in 2023 and 2024, with U.S. electricity prices rising by 3.3% and 2.8%, respectively, measured over the year.

In 2025, U.S. electricity prices again accelerated, rising by an estimated 6.7% over the year, even as overall inflation remained comparatively subdued. This renewed divergence between electricity prices and

[8] The reported over the year inflation estimates are measured over a twelve-month period. When measured using year-over-year changes in annual averages, inflation was 1.3% in 2020, 4.7% in 2021, 8.0% in 2022, 4.1% in 2023, 3.0% in 2024, and 2.7% in 2025.

the broader price level has intensified concerns regarding the impact of energy costs on household budgets. It has also coincided with heightened policy attention paid to electricity demand growth, particularly related to the rapid expansion of data centers and the potential implications for system capacity and retail rates.

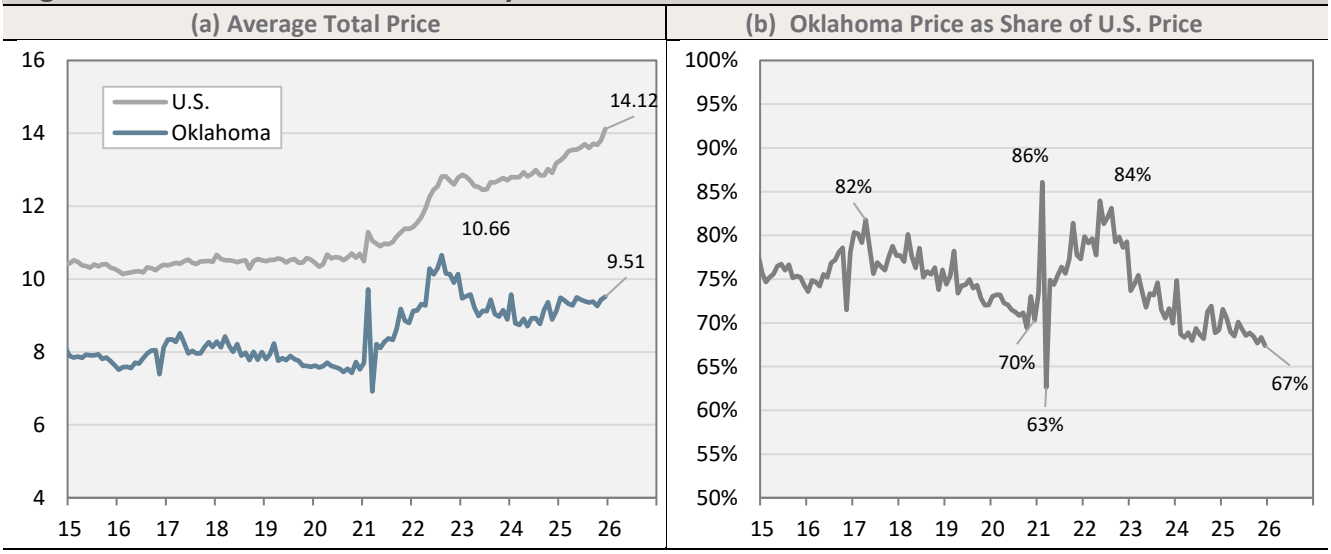
Cumulatively, overall U.S. consumer prices increased by 24.4% between December 2020 and December 2025. **Over the same period, electricity prices in the CPI rose by 37.9% – roughly 13 percentage points more than the broader price level.** This sustained divergence represents a clear departure from pre-pandemic trends and helps explain why electricity prices have emerged as an increasingly prominent economic and policy concern.

U.S. vs. Oklahoma Electricity Price Trends

A central objective of this report is to assess the extent to which Oklahoma electricity prices have been driven by national forces versus state-specific dynamics. The analysis relies on electricity price data from the EIA's Form EIA-861 survey.

Figure 3 presents average total electricity prices (in cents per kWh) from EIA for Oklahoma and the United States over the past decade. The series are seasonally adjusted to remove routine monthly variation associated with weather and short-term demand fluctuations, allowing clearer identification of underlying price trends.

Figure 3. U.S. vs. Oklahoma Electricity Prices



Source: U.S. Energy Information Administration Form EIA-861 and RegionTrack calculations
Notes: Oklahoma does not have electricity usage covered by EIA under the transportation sector

Several clear patterns emerge from the price trends shown in Figure 3.

First, the pre-pandemic period was characterized by broad price stability at both the national and state levels. U.S. electricity prices were largely flat from 2015 through 2020. Oklahoma prices, by contrast, declined steadily from 2017 through late 2020, widening the state's relative price advantage prior to the pandemic.

Second, Winter Storm Uri produced a sharp but temporary divergence. In early 2021, Oklahoma experienced significantly larger price swings than the national average, reflecting the severe regional impact of the storm and the associated surge in natural gas prices. While electricity prices increased nationally, the effect was far more pronounced in states directly affected by the event.

Third, electricity prices accelerated nationally and in Oklahoma beginning in 2021. From December 2020 through December 2025, average electricity prices increased 32.4% nationally and 27.6% in Oklahoma.

Although both experienced substantial post-pandemic price growth, Oklahoma's cumulative increase was nearly five percentage points smaller than the nation.

Fourth, Oklahoma's relative price competitiveness improved following the 2021–2022 surge. Figure 3b shows Oklahoma's average price as a share of the U.S. average. After temporarily rising above 80% during the Winter Storm Uri period, Oklahoma's relative price declined steadily beginning in mid-2022 and fell below 70% by early 2024. By December 2025, **Oklahoma's average electricity price was approximately 67% of the national average – the lowest relative level observed over the past decade aside from the immediate storm-related volatility**.

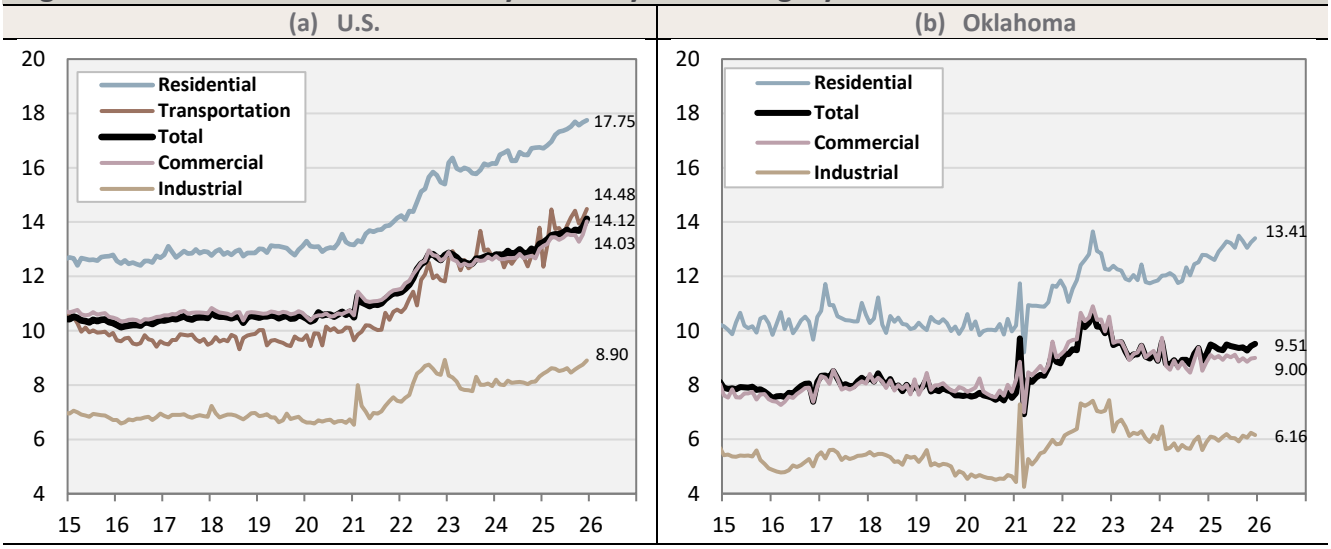
Taken together, these trends show that while national inflation and the 2021 winter storm produced significant electricity price pressures, Oklahoma has ultimately reinforced its position as one of the lowest-cost electricity states in the country.

Electricity Prices by User Category

The analysis in the prior section focused on the average price across all sectors which can obscure the composition of electricity price changes for various user groups. Prices historically vary greatly across user groups. Figure 4 displays average prices per kWh for the U.S. and Oklahoma across the residential, commercial, industrial, and transportation sectors over the past decade, including the pronounced acceleration in prices since the onset of the pandemic.

It is important to note that the EIA reports no measurable electricity usage in the transportation sector for Oklahoma during this period. The EIA defines the transportation sector as electricity consumed by vehicles whose primary purpose is transporting people or goods – including automobiles, trucks, buses, trains, aircraft, and ships. Oklahoma has relatively little of this activity. As a result, transportation-sector electricity prices are excluded from Oklahoma-specific analysis but retained in national comparisons for consistency

Figure 4. U.S. vs. Oklahoma Electricity Prices by User Category



Source: U.S. Energy Information Administration Form EIA-861 and RegionTrack calculations
Notes: Data is seasonally adjusted. Oklahoma does not have electricity usage covered by EIA under the transportation sector

Several structural relationships across customer classes are evident nationally and in most states. Residential rates are typically the highest, reflecting the fixed costs of maintaining extensive distribution networks and serving a large number of small customers with variable load profiles. Industrial rates are generally the lowest – often roughly half of residential rates – because large, high-load facilities allow more efficient delivery and better utilization of generation and transmission infrastructure. Commercial rates usually cluster near the overall system average. This category includes many small businesses, but it also encompasses energy-intensive users such as data centers, whose high and continuous but variable load can materially influence system planning, cost

allocation, and rate design. Transportation rates have historically fallen slightly below the overall average but have moved closer to it as electrification has expanded and rate structures have evolved.

National Factors

Prior to examining Oklahoma-specific outcomes, it is important to establish several stylized facts from the national electricity price data in the 2020 to 2025 period in Figure 4a. We focus first on national price movements because they reflect common shocks – including fuel cost volatility, wholesale market conditions, federal policy developments, and macroeconomic activity – that influence all state markets to varying degrees. In addition, national growth rates serve as the benchmark in the decomposition framework employed later in this report, allowing state-level price changes to be separated into national and Oklahoma-specific components. The national evidence therefore provides both context and a reference point for evaluating Oklahoma's response since 2020.

Several key patterns in the national data stand out and help frame the analysis that follows:

1. **All customer categories experienced sustained price increases from 2020 to 2025.** After relatively modest movements across multiple years prior to the pandemic, each sector recorded a clear upward shift beginning in 2021. Overall, average electricity prices across all sectors increased by 32.4% between December 2020 and December 2025.
2. **Price increases were broadly synchronized across sectors in 2021 and 2022.** The similarity in increases during this period suggests that system-wide cost pressures – such as broader inflation and higher fuel costs – were the dominant drivers.
3. **A temporary spike occurred in early 2021 associated with Winter Storm Uri.** In February 2021, overall U.S. electricity prices rose sharply as a result of the storm, particularly in the industrial sector and, to a lesser extent, in commercial prices.[9] Residential prices showed little movement at the national level. The spike was short-lived and largely reversed in subsequent months but remains visible in the data as a brief disruption during the broader inflationary transition. The storm played a large role in Oklahoma and other states in the surrounding region including Texas.
4. **Price movements became more differentiated after 2022.** As overall inflation moderated in 2023, sector-specific dynamics appear to have played a larger role in shaping price trajectories. Through 2025, residential rates increased the most, commercial and transportation closely followed the overall average, and industrial prices remained relatively flat.
5. **Residential prices remain the highest among all user categories and have experienced substantial cumulative growth.** Residential electricity prices increased 34.9% between December 2020 and December 2025, far exceeding the 24.4% increase in the overall CPI during the same period. Beginning in 2023, residential price increases outpaced the overall electricity average, widening the gap between residential prices and the aggregate electricity price measure. The resulting divergence helps explain the growing policy concern over household electricity costs.
6. **Industrial prices remain the lowest in level terms and have shown comparatively limited growth in the most recent years examined.** Industrial electricity prices rose by 33.0% over the full 2020-2025 period, but were flat from early 2023 through 2025, contributing to a widening spread between residential and industrial rates.
7. **Commercial prices recorded the smallest cumulative increase, while transportation prices increased sharply.** Commercial prices rose by 31.0% over the period, slightly less than the 32.4% overall increase. The commercial category includes large-scale electricity users such as data centers.

[9] See: https://www.eia.gov/todayinenergy/detail.php?id=47876

Rapid expansion of data center activity has been a major source of incremental electricity demand nationally and in several states, raising concerns that sustained growth in this segment could place upward pressure on system capacity and potentially affect prices faced by other customer classes. Transportation prices increased by 42.4% from December 2020 to December 2025 and, after sitting below commercial prices prior to the pandemic, moved closer to parity in recent years.

Nationally, most categories of electricity usage experienced a price increase of approximately one-third in the 2020 to 2025 period (*see Figure 5*). The increases were relatively uniform when viewed over the full period. However, the divergence in cumulative increases across customer categories – particularly the post-2023 acceleration in residential prices relative to the overall average, the much smaller increases in commercial and transportation prices, and the comparatively muted increases in industrial rates – underscores the importance of examining sector-level dynamics when assessing the broader economic implications of rising electricity costs.

Figure 5. U.S. vs. Oklahoma Electricity Price Change by User Category

% Change: Dec-2020 to Dec-2025

Sector	U.S.	Oklahoma	State Differential
Residential	34.9%	36.1%	+1.2%
Commercial	31.0%	17.7%	-13.3%
Industrial	33.0%	33.0%	0%
Transportation	42.4%	na	na
All Sectors	32.4%	27.6%	-4.8%

Source: U.S. Energy Information Administration Form EIA-861 and RegionTrack calculations

Notes: Oklahoma does not have electricity usage covered by EIA under the transportation sector

Oklahoma vs. U.S. Electricity Price Trends

We now turn to the path of electricity prices in Oklahoma since 2020. Because state electricity systems differ in fuel mix, regulatory structure, and user composition, the transmission of national shocks can vary substantially across states. In addition, state-level electricity prices are influenced by state-level market forces – including shifts in electricity demand, fuel costs, wholesale market conditions, and transmission constraints.

While electricity generation in Oklahoma is largely state based, the state participates in the Southwest Power Pool (SPP), a regional transmission organization that coordinates electricity production and grid operations across multiple states. Despite this regional coordination, retail electricity prices are determined primarily by regulated utilities and other electricity providers operating within the constraints of Oklahoma's regulatory framework. These providers are responsible for the retail sale of electricity to the ultimate user.

Oklahoma's generation mix is particularly relevant in this context. Over the past two decades, the state has shifted significantly away from coal toward wind generation, while natural gas remains a major source of electricity production. Movements in natural gas prices therefore transmit directly into production costs and retail pricing dynamics. As a result, Oklahoma's price path can differ meaningfully from national averages and other states with a different production mix.

Oklahoma 2020-2025

. Figure 4b illustrates the path of Oklahoma's experience since 2020 relative to the nation. Figure 5 provides a summary of cumulative percentage changes in sales by user category from 2020 to 2025 for both the nation and Oklahoma.

Review of the state indicates that state performance diverged in several important respects from national trends:

1. **A pronounced early surge relative to the nation in 2021-2022.** From December 2020 through December 2022, Oklahoma electricity prices increased by 35%, compared with only 20% nationally. Industrial prices rose particularly sharply, increasing by 60% over this period, while commercial prices increased by 37% – both well above national gains. Residential prices increased by 23%, also above the

17% national residential increase over the same period. Much of the early surge is traced to Winter Storm Uri.

2. **Winter Storm Uri produced a temporary but severe spike.** In February 2021, average electricity prices in Oklahoma increased by nearly 30% in a single month, reflecting extraordinary market conditions during the storm. The spike largely reversed the following month in March 2021, after which prices resumed their upward trajectory through 2022.
3. **A material price correction beginning in 2023.** Following the outsized price gains in 2021 and 2022, Oklahoma electricity prices declined by approximately 12% in 2023 – a surprising outcome notably different from the national pattern, where prices moderated but did not fall. This decline represented a partial correction from **the earlier surge in prices during 2021–2022 and is consistent with the possibility that early price adjustments temporarily overshot underlying cost pressures as utilities responded to extreme fuel volatility and storm-related cost recovery**. As a result, Oklahoma's relative electricity price competitiveness improved sharply during the 2023–2025 period as price growth in the state moderated relative to the national trend.
4. **Recent price increases concentrated in residential rates.** Overall electricity prices in Oklahoma increased modestly in 2024 (2.9%) and accelerated somewhat in 2025 (4.2%). Nearly all of this recent growth reflects rising residential rates. Residential prices increased 8.2% in 2024 and 5.0% in 2025 – a cumulative increase of roughly 14% over two years. Commercial prices rose only 1.5% over the same two-year period, while industrial prices increased 2.9%. **The concentration of recent price increases in residential rates helps explain the growing policy concern over household electricity affordability and rate equity in the state.**
5. **Commercial prices are the primary sector diverging from national trends.** Across most sectors, Oklahoma price trends closely track national patterns. Residential prices increased 36% between December 2020 and December 2025, slightly exceeding the 35% national increase, while industrial prices rose 33%, essentially matching the national industrial gain. The notable exception is the commercial sector. **Commercial electricity prices in Oklahoma increased only 18% over the period, far below the 31% national increase.** Because the commercial category includes large electricity users such as data centers and other data-intensive facilities, this slower growth in commercial prices is central to understanding Oklahoma's evolving electricity cost advantage.

Taken together, Oklahoma's experience reflects an initial period of intense price pressure – particularly among industrial customers – followed by a meaningful correction and more moderate overall growth. During Winter Storm Uri in February 2021, residential rates remained comparatively stable, in part because many households were served under rate structures that dampened short-term price volatility. The state's securitization of storm-related fuel costs further moderated the immediate impact on residential customers by spreading recovery over several decades, reducing short-term price spikes even though the underlying costs were ultimately shared across customer classes. By contrast, many commercial and especially industrial customers operate under rate structures more closely tied to fuel costs, peak demand, or wholesale market conditions, making them more exposed to short-term price surges.

More recently, however, residential rate increases have accelerated, widening the gap between residential prices and the statewide average and renewing concerns about household electricity affordability. **Since 2020, cumulative price gains for residential and industrial users in Oklahoma have exceeded those for commercial customers. Even so, when viewed over the full post-pandemic period, overall electricity price growth in Oklahoma has remained below the national average**.

Decomposition of Oklahoma Electricity Prices (2020–2025)

The preceding sections document how Oklahoma's electricity price trajectory diverged from national trends during the 2020-2025 period. Over this interval, **Oklahoma's average annual electricity price increased from 7.63 cents per kWh in 2020 to 9.50 cents in 2025, a rise of 1.87 cents, or 24.5%**. **Nationally, the average annual electricity price increased from 10.59 cents per kWh to 13.63 cents, a gain of 3.04 cents, or 28.7%**.

Although both Oklahoma and the nation experienced substantial post-pandemic price growth, Oklahoma's cumulative increase was materially smaller, reinforcing the state's long-standing relative price advantage. Oklahoma ranked as the second-lowest electricity price state in 2020 but temporarily fell to 14th in 2022 following the sharp price surge associated with Winter Storm Uri and related fuel market disruptions. As price growth moderated relative to the nation beginning in 2023, Oklahoma regained ground and returned to the second-lowest position by 2025.

Taken together, the period reflects a temporary erosion of competitiveness followed by a reestablishment of Oklahoma's position as a comparatively low-cost electricity state.

Shift-Share Approach

The purpose of this section is to examine how Oklahoma's electricity price changes varied across customer categories and to distinguish between national influences and Oklahoma-specific factors over the 2020-2025 period. To do so, we apply the widely used shift-share decomposition framework to electricity prices by user category.

Shift-share analysis separates observed price changes into components attributable to national trends, differences in customer composition, and state-specific pricing dynamics, allowing the relative contribution of each factor to Oklahoma's overall price performance to be identified. The methodology is described in detail in Appendix A.

The analysis evaluates the change in Oklahoma electricity prices between 2020 and 2025 – a period that begins near a cyclical low in electricity prices and encompasses the subsequent post-pandemic acceleration. Prices are measured as annual averages of unadjusted monthly data, ensuring consistency with reported annual values.

For Oklahoma, the analysis includes the residential, commercial, and industrial sectors. Because the EIA reports no measurable transportation-sector electricity usage for Oklahoma during this period, that category is removed from the national totals and excluded from the state-level decomposition.

Interpreting Shift-Share Decomposition Results

The shift-share approach separates Oklahoma's total price change from 2020 to 2025 into four components:

- **a national effect**, reflecting broad U.S. electricity price movements driven by fuel costs, wholesale markets, inflation, and other system-wide factors. *The national effect reflects the change in Oklahoma electricity prices that would have occurred if prices in the state had risen at exactly the same rate as the national average.*
- **a structural (mix) effect**, capturing differences in national price growth across residential, commercial, and industrial customers. *The structural effect reflects how Oklahoma's mix of electricity usage across customer classes influences the overall price change when national price trends differ across those classes.*
- **a competitive effect**, measuring how Oklahoma's category-specific price changes differ from national trends. *The competitive effect reflects how much Oklahoma prices rise or fall relative to the nation within each customer category.*
- **an allocative (specialization) effect**, indicating whether Oklahoma's electricity usage is concentrated in sectors where the state's price performance differs from the national average. *The allocative effect*

reflects whether Oklahoma is relatively more or less concentrated in the sectors where its prices are rising faster or slower than the nation.

The four-part framework allows the change in Oklahoma electricity prices to be interpreted in two stages. First, the **national** and **structural** effects together represent the price change Oklahoma would have experienced if electricity prices within each customer category had followed national trends. This combined benchmark reflects broad U.S. market forces – including fuel costs, wholesale electricity conditions, and inflation – adjusted for Oklahoma's mix of residential, commercial, and industrial electricity usage.

Second, the **competitive** and **allocative** effects – together referred to as the **regional effect** – measure the extent to which Oklahoma's actual price performance diverged from that national benchmark. A **negative regional effect** indicates that electricity prices in Oklahoma grew more slowly than national trends would have implied, while a **positive regional effect** indicates faster-than-national price growth within one or more customer categories.

The shift-share analysis is applied both to the overall electricity price and to prices within each EIA customer category. When analyzing the **total electricity price**, the structural (mix) and allocative (specialization) effects are zero by definition. Because the overall price already reflects the weighted average across all customer classes, there is no separate customer mix or specialization to evaluate. As a result, only the **national** and **competitive** effects apply when decomposing the total electricity price for a region.[10]

When analyzing **prices within individual customer categories**, however, all four effects are relevant. In those cases, differences in customer composition and sector-specific pricing patterns jointly explain how Oklahoma's electricity prices evolved relative to national trends over the period.

Oklahoma Price Decomposition Results

The results of the decomposition of Oklahoma electricity price changes between 2020 and 2025 are presented in Figure 6. Prices for Oklahoma and the U.S. in 2020 and 2025 are calculated as an annual average of monthly values. Between 2020 and 2025, Oklahoma's average electricity price increased from 7.63 to 9.50 cents per kWh – a gain of 1.87 cents (24.5%). Over the same period, the U.S. average increased by 2.99 cents (28.3%). While Oklahoma experienced substantial post-pandemic price growth, its cumulative increase was smaller than the national average, reinforcing the state's relative price advantage.

The shift-share technique is used to explain the sources of the 1.87-cent increase in Oklahoma's average electricity price and distinguishes between national market forces and Oklahoma-specific pricing dynamics across customer categories. Results are examined first for the total price and then for each of the user classes.

Aggregate Price Decomposition Results

At the aggregate (Total) level, Oklahoma's 1.87-cent increase from 2020 to 2025 decomposes as follows:

Actual price change 2020 to 2025: +1.87 cents (+24.5%)

- National effect: +2.19 cents
- Structural (mix) effect: 0.00 cents
- Competitive effect: –0.32 cents
- Allocative effect: 0.00 cents

[10] The structural (mix) and allocative (specialization) effects arise only when the outcome being analyzed is composed of multiple underlying categories, such as residential, commercial, and industrial customer classes. These effects measure whether differences in category composition influence the overall result. When analyzing the total average electricity price, however, the sectoral mix is already embedded in the weighted average. There is no separate composition to compare, and the total cannot be specialized relative to itself. As a result, the structural and allocative effects are zero at the aggregate level, and only the national and competitive effects remain.

Figure 6. Decomposition of Oklahoma Electricity Price Change: 2020-2025

User	Total	Residential	Commercial	Industrial
Oklahoma:				
2020 Price (cents/kWh)	7.63	10.12	7.82	4.61
2025 Price (cents/kWh)	9.50	13.12	9.08	6.15
Change	1.87	3.00	1.25	1.54
%Change	24.5%	29.7%	16.0%	33.4%
United States:				
2020 Price (cents/kWh)	10.59	13.15	10.59	6.67
2025 Price (cents/kWh)	13.63	17.30	13.41	8.62
Change	3.04	4.14	2.82	1.96
%Change	28.7%	31.5%	26.6%	29.3%
Growth Differential	-4.2%	-1.8%	-10.6%	4.1%
OK Shift Share Components:				
National Effect	2.19	2.90	2.25	1.32
Structural (mix) Effect	0.00	0.28	-0.16	0.03
Competitive Effect	-0.32	-0.17	-0.81	0.20
Allocative Effect	0.00	-0.01	-0.02	-0.01
Total Effect	1.87	3.00	1.25	1.54
Regional (Competitive+Allocative)	-0.32	-0.19	-0.83	0.19

Interpretation: While Oklahoma electricity prices posted a strong gain of 1.87 cents from 2020 to 2025, national price growth alone would have increased Oklahoma's average price by approximately 2.19 cents. The actual increase was 0.32 cents smaller, reflecting more moderate electricity price growth within the state relative to the nation.

Because the structural and allocative effects are zero at the total level by definition, Oklahoma's aggregate divergence from national price growth is captured by the state competitive effects. In practical terms, Oklahoma's smaller cumulative increase of -0.32 cents in the total price in the period was not the result of a different customer mix or an advantageous starting price structure. Instead, it reflects how prices changed within specific state sectors relative to national trends. We examine the changes attributable to each of the various user groups next.

Sector-Level Price Decomposition Results

The four-part decomposition is performed for price in each user sector in Oklahoma:

Residential

Actual price change 2020 to 2025: +3.00 cents (+29.7%)

- National effect: +2.90 cents
- Structural (mix) effect: +0.28 cents
- Competitive effect: –0.17 cents
- Allocative effect: –0.01 cents
    - Regional (competitive + allocative): -0.18 cents

Interpretation: National and structural effects together imply that state residential electricity prices would have increased by approximately 3.18 (2.90+0.28) cents if Oklahoma had fully mirrored national sector trends. The actual increase was slightly smaller at 3.00 cents.

The positive structural effect (+0.28) reflects the fact that national residential price growth exceeded national average growth across sectors. In other words, residential electricity was one of the faster-growing components nationally, and that national pattern placed upward pressure on Oklahoma residential prices.

However, the modest negative competitive effect indicates that Oklahoma residential pricing grew slightly more slowly than the national residential benchmark – 29.7% in Oklahoma versus 31.5% nationally. **Overall, residential pricing increased more slowly in Oklahoma but largely tracked national dynamics.**

Policy implication: Residential rate performance suggests that Oklahoma households were broadly exposed to national fuel and inflation pressures, but not disproportionately so.

Commercial

Actual price change 2020 to 2025: +1.25 cents (+16.0%)

- National effect: +2.25 cents
- Structural (mix) effect: –0.16 cents
- Competitive effect: -0.81 cents
- Allocative effect: -0.02 cents
    - Regional (competitive + allocative): -0.83 cents

Interpretation: National and structural effects together imply that state commercial prices would have increased by approximately 2.09 cents (2.25–0.16) if Oklahoma had matched the national sector price change. Instead, the actual increase was only 1.25 cents.

The negative structural effect (–0.16) reflects modest differences between Oklahoma's overall electricity usage mix and the national sector distribution. However, this effect is small. **The dominant factor is the large negative competitive effect (–0.81), indicating that Oklahoma commercial prices grew substantially more slowly than national commercial prices.**

The commercial sector therefore accounts for most of Oklahoma's overall divergence from national electricity price trends. The large competitive effect in this sector indicates that the state's relative price advantage is driven primarily by slower commercial price growth within Oklahoma rather than by differences in customer mix or national price movements.

Policy implication: The shift-share results show that Oklahoma's relative electricity price advantage since 2020 is largely a **commercial pricing phenomenon**. Slower commercial price growth alone more than explains the state's divergence from national electricity price trends, strengthening Oklahoma's cost position for businesses – including large electricity users such as data centers – but raising important questions about how future infrastructure costs associated with rapid commercial load growth will be allocated across customer classes.

Industrial

Actual price change 2020 to 2025: +1.54 cents (+33.4%)

- National effect: +1.32 cents
- Structural (mix) effect: +0.03 cents
- Competitive effect: +0.20 cents
- Allocative effect: –0.01 cents
    - Regional (competitive + allocative): +0.19 cents

Interpretation: National and structural effects together imply an expected increase of approximately 1.35 cents (1.32+0.03) in state industrial electricity prices. The actual increase was 1.54 cents.

The positive competitive effect (+0.20) indicates that **industrial prices in Oklahoma rose faster than national industrial prices** over the full period.

This divergence may reflect heightened exposure of industrial customers to fuel cost volatility during the Winter Storm Uri period and its aftermath.

Policy implication: Although industrial electricity prices in Oklahoma increased slightly faster than national industrial prices, the divergence is modest relative to the large price moderation observed in the state's commercial sector. Oklahoma's overall price advantage therefore persists, but the results suggest that industrial customers may be more exposed to fuel price volatility and cost recovery mechanisms, highlighting the importance of stable and predictable industrial rate design for energy-intensive industries. This divergence may reflect heightened exposure of industrial customers to fuel cost volatility during the Winter Storm Uri period and its aftermath.

Overall Price Shift-Share Conclusions and Implications

Four principal conclusions emerge from the shift-share analysis of Oklahoma electricity prices between 2020 and 2025.

First, national forces dominated Oklahoma electricity price movements.
Broad fuel cost volatility, wholesale market conditions, and general inflationary pressures explain the majority of Oklahoma's 1.87-cent increase in average electricity prices. **National effects alone would have raised Oklahoma prices by approximately 2.19 cents.** The smaller from 2020 to 2025observed increase indicates that state-level dynamics moderated the strong upward pressures affecting electricity prices nationwide.

Second, Oklahoma's cumulative price growth remained below the national average.
The aggregate regional effect of –0.32 cents reflects modest but meaningful moderation relative to national trends. Because structural and allocative effects are zero at the total price level by construction, this divergence is not driven by differences in customer mix or initial price structure. Instead, it reflects differences in how state prices evolved relative to national prices within individual sectors.

Third, commercial pricing explains most of the state's relative advantage.
The largest sectoral competitive effect occurs in the commercial category (–0.81 cents), indicating that **Oklahoma commercial prices increased substantially more slowly than national commercial prices**. This moderation more than offset the modest positive competitive effect observed in industrial pricing (+0.20 cents), while residential prices closely tracked national trends. As a result, **restrained commercial price growth explains the bulk of Oklahoma's aggregate divergence from national electricity price movements**.

Fourth, residential and industrial pricing largely followed national patterns.
Residential prices rose at rates broadly consistent with national trends, suggesting that Oklahoma households experienced similar underlying cost pressures. Industrial prices increased somewhat faster than national industrial prices, likely reflecting heightened exposure to fuel cost volatility during the Winter Storm Uri period. However, the magnitude of this divergence is modest relative to the commercial sector's moderating influence.

Taken together, the results indicate that Oklahoma's restored price competitiveness since 2022 is largely a **commercial pricing phenomenon** rather than a broad-based difference across all customer classes. This outcome has important implications for economic development as commercial load growth increasingly includes electricity-intensive users such as data centers.

If new generation or transmission capacity is required to support rapid commercial load growth, regulatory decisions regarding cost allocation will become increasingly consequential. Infrastructure costs could be concentrated within expanding commercial loads – preserving residential and industrial rate stability – or shared more broadly across other customer classes, with potential implications for household affordability and industrial competitiveness.

In short, Oklahoma's relative electricity price advantage during the post-pandemic period has been maintained not through structural composition effects but through sector-specific pricing outcomes, most notably within the commercial sector. Whether that advantage persists will depend on how the state manages the interaction between rapid commercial load growth, infrastructure investment, and equitable rate design across customer classes.

Decomposing Oklahoma Electricity Demand Growth: 2020-2025

While the previous section examined how electricity prices evolved across sectors from 2020 to 2025, the next step is to examine how electricity demand itself changed during the same period. This section applies the same shift-share framework used in the price analysis to electricity demand, measured here as retail electricity sales. Electricity demand growth is closely linked to electricity pricing because rapid expansion in load can require substantial investment in generation, transmission, and distribution infrastructure. The previous section showed that Oklahoma preserved a strong electricity price advantage relative to the nation despite significant post-pandemic volatility. Understanding whether that advantage is sustainable requires examining how electricity demand has evolved across customer classes.

The decomposition separates overall demand growth into national demand trends and Oklahoma-specific competitive effects while identifying the sectors responsible for the state's divergence from national patterns. This perspective is particularly relevant given recent attention to electricity-intensive commercial activity such as data centers. If load growth is concentrated within a specific sector – especially one associated with large, energy-intensive facilities – the implications for infrastructure investment and cost allocation may differ significantly from a scenario in which demand growth is broadly distributed across residential, commercial, and industrial customers.

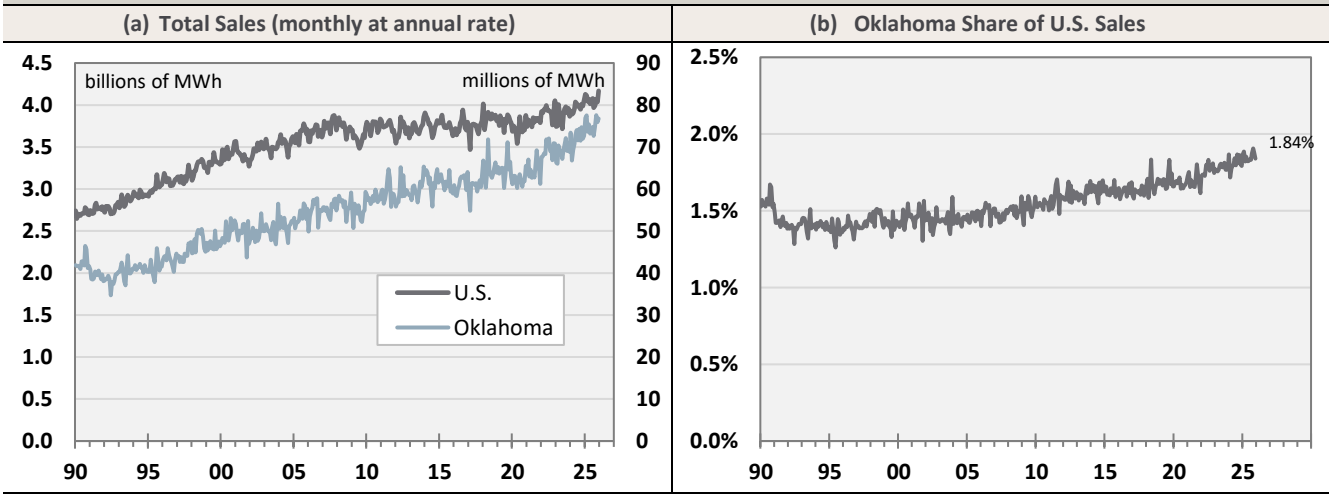
The analysis shows that Oklahoma's recent demand expansion has been both unusually rapid and highly concentrated in the commercial sector, providing important context for the pricing dynamics discussed earlier in the report.

U.S. vs. Oklahoma Load Growth and Composition

Figure 7a illustrates the long-run trajectory of total electricity sales nationally and in Oklahoma since 1990. U.S. electricity demand expanded steadily from 1990 through 2007, plateaued for more than a decade through 2020, and then resumed an upward trend through 2025. In contrast, Oklahoma has exhibited more consistent growth over much of the period. As a result, the state's share of national electricity sales has gradually increased – rising from just under 1.5% in the early 2000s to a record 1.84% in 2025 (*see Figure 7b*).

The divergence is particularly pronounced in the 2020 to 2025 period examined in this report. **Oklahoma electricity sales increased from 62.3 million MWh to 75.1 million MWh – a gain of 12.8 million MWh, or 20.6%**. Over the same interval, **U.S. electricity sales increased only 9.2%**. Oklahoma therefore outpaced national growth by 11.4 percentage points – posting more than double the national rate of expansion.

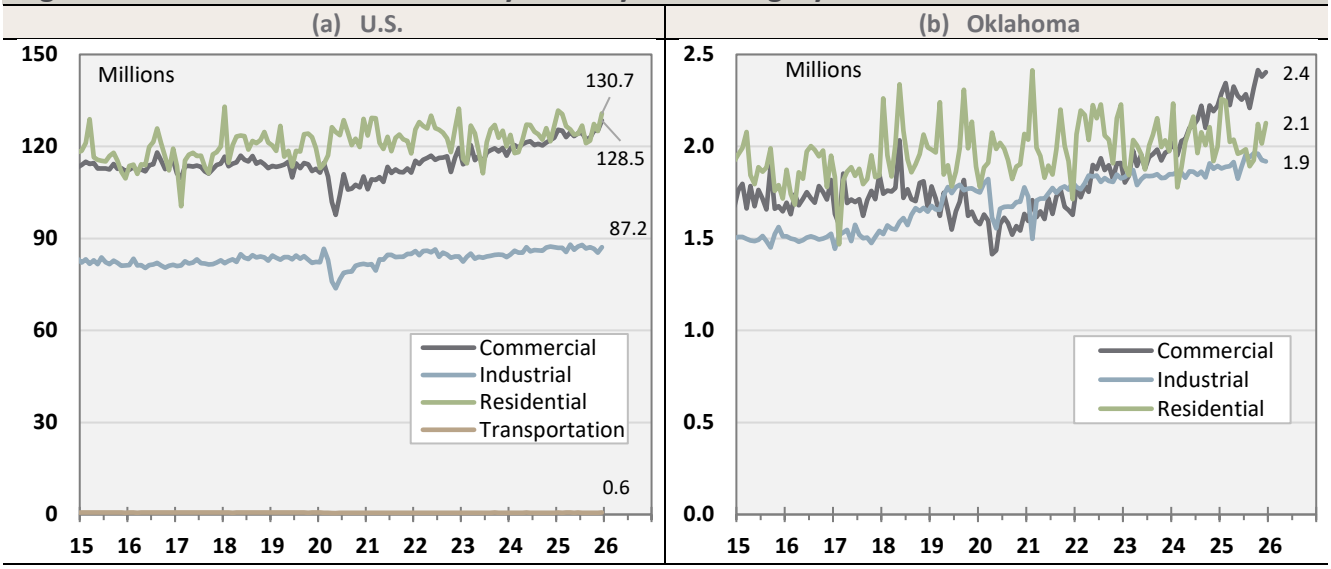
Figure 7. U.S. vs. Oklahoma Total Electricity Sales to Ultimate User



Source: U.S. Energy Information Administration Form EIA-861 and RegionTrack calculations
Notes: Monthly data is seasonally adjusted using the Census X-13 procedure.

Oklahoma (+20.6%) posted the 7th largest percentage increase in total load among the states[11] in the period, trailing only North Dakota (+39.0%), New Mexico (+27.4%), Virginia (+23.4%), Texas (21.7%), Nebraska (+20.7%), and Oregon (+20.7%). Following Oklahoma, the remainder of the top ten includes Iowa (15.7%), Arkansas (15.5%), and Georgia (15.1%). Seventeen states posted growth of 10% or more from 2020 to 2025. In contrast, eight states posted growth of 2% or less, while Maine and California reported small reductions in electricity usage.

Figure 8. U.S. vs. Oklahoma Electricity Sales by User Category



Source: U.S. Energy Information Administration Form EIA-861
Notes: Monthly data is seasonally adjusted using Census X-13 procedure. Oklahoma does not have electricity usage covered by EIA under the transportation sector.

Figure 8 details the trend in both national and Oklahoma electricity sales to the ultimate customer by user group over the past decade. There are key differences between Oklahoma and the nation in electricity usage patterns.

- **Oklahoma has a relatively balanced mix of commercial, industrial, and residential usage**. The nation has a far smaller level of industrial usage relative to commercial and residential.
- The key similarity between the state and the nation is that nearly all load increase in Oklahoma since 2020 is traced to the commercial sector. In Oklahoma, **commercial moved from the smallest category to the largest between 2020 and 2025**, increasing by nearly half in the period.
- **Residential and industrial usage remained relatively stable the past decade** at both the national and state levels, despite significant population growth.
- Oklahoma reported some growth in industrial usage the past decade, with most of the gain occurring between 2018 and 2020 and only modest growth since.

Oklahoma Load Shift Share

This sustained outperformance in total electricity demand raises an important analytical question: Is Oklahoma's growth driven primarily by national demand trends, differences in sector composition, or state-specific expansion within particular customer classes? The shift-share analysis that follows is designed to disentangle these effects.

Figure 9 summarizes the results from the shift-share approach applied to electricity sales volumes in Oklahoma by customer class in the 2020 to 2025 period. The four-part shift-share approach decomposes Oklahoma's sales growth of 12.8 million MWh in the period into same national demand trends, structural changes in usage mix, and state-specific competitive effects used in the prior section of the report. By separating these influences, the

[11] States is used broadly to represent the fifty states and the District of Columbia.

analysis clarifies whether recent load growth reflects broad national demand trends or Oklahoma-specific expansion within particular sectors – especially the commercial category where data center activity would be most visible.

Figure 9. Decomposition of Oklahoma Electricity Sales Change: 2020-2025

User	Total	Residential	Commercial	Industrial
Oklahoma:				
2020 Sales (MWh)	62,299,305	23,232,473	18,698,988	20,367,844
2025 Sales (MWh)	75,114,577	24,474,650	27,676,981	22,962,946
Change	12,815,272	1,242,177	8,977,993	2,595,102
%Change	20.6%	5.3%	48.0%	12.7%
United States:				
2020 Sales (MWh)	3,711,126,657	1,464,605,046	1,287,439,583	959,082,028
2025 Sales (MWh)	4,050,696,239	1,514,993,230	1,493,486,094	1,042,216,915
Change	339,569,582	50,388,185	206,046,511	83,134,887
%Change	9.2%	3.4%	16.0%	8.7%
Growth Differential	11.4%	1.9%	32.0%	4.1%
OK Shift Share Components:				
National Effect	5,700,411	2,125,781	1,710,965	1,863,666
Industrial (mix) Effect	0	-1,326,492	1,281,689	-98,146
Competitive Effect	7,114,860	468,702	6,917,910	655,764
Allocative Effect	0	-25,814	-932,571	173,818
Total Effect	12,815,272	1,242,177	8,977,993	2,595,102
Regional (Competitive+Allocative)	7,114,860	442,888	5,985,339	829,582

Aggregate Results (All Sectors)

Actual total sales increase of 12,815,272 MWh decomposes as follows:

- National effect: +5,700,411
- Structural effect: 0
- Competitive effect: +7,114,860
- Allocative effect: 0

Interpretation: National demand growth alone would have increased Oklahoma electricity sales by approximately 5.7 million MWh between 2020 and 2025. However, Oklahoma's actual sales growth far exceeded this pace. State-specific expansion contributed an additional 7.1 million MWh through competitive effects, accounting for roughly 56% of the total increase in electricity sales during the period. In other words, **more than half of Oklahoma's sales growth reflects performance above national demand trends rather than broader nationwide increases in electricity consumption**. This underscores the importance of sector-specific dynamics in explaining Oklahoma's recent electricity demand growth.

Policy implication: The state's outperformance is explained by some overall sales growth at the national level but more so by state-specific competitive effects – that is, stronger sector-specific growth relative to national patterns.

Sector-Level Decomposition

Unlike with prices that are weighted averages, sector-level shift-share quantity effects do sum to the total. This allows precise identification of where demand growth occurred.

Residential

Actual sales growth 2020 to 2025**:** +1,242,177 MWh (5.3%)

- National effect: +2,125,781

- Structural effect: –1,326,492
- Competitive effect: +468,702
- Allocative effect: –25,814
  - Regional (competitive + allocative): +442,888

Interpretation: Residential electricity sales in Oklahoma increased by 1.24 million MWh (5.3%) between 2020 and 2025. National residential demand growth alone would have increased Oklahoma residential sales by roughly 2.13 million MWh if state demand had followed national residential trends. However, Oklahoma's overall sector mix reduced the expected growth contribution from residential demand, reflected in the negative structural effect.

The positive competitive effect indicates that Oklahoma residential demand grew somewhat faster than would be expected based on national trends alone, but the magnitude of this effect is relatively small. Overall, residential demand growth remained modest compared with the surge in commercial electricity usage and therefore contributed only about 10% of the total increase in statewide electricity sales.

Policy implication: Residential demand was not the primary driver of Oklahoma's outperformance in load growth relative to the nation. Most of the state's divergence from national demand growth occurred outside the residential sector. However, residential sales growth in Oklahoma outpaced gains at the national level.

Commercial

Actual sales growth 2020 to 2025**:** +8,977,993 MWh (48.0%)

- National effect: +1,710,965
- Structural effect: +1,281,689
- Competitive effect: +6,917,910
- Allocative effect: –932,571
  - Regional (competitive + allocative): +5,985,339

Interpretation: Commercial electricity demand growth (+8.98 million MWh) accounts for roughly 70% of Oklahoma's total load growth (+12.82 million MWh) between 2020 and 2025, making it the dominant driver of the state's electricity expansion during the period. Put differently, **Oklahoma's commercial electricity demand grew nearly three times faster than national commercial demand during the period** (Oklahoma: 48% vs. U.S. 16%).

The shift-share decomposition indicates that three forces contributed to this growth. First, national commercial demand growth added modestly to Oklahoma's expansion. Second, the positive structural effect indicates that Oklahoma is relatively concentrated in a sector that is growing nationally. Third – and most importantly – the large competitive effect (+6.9 million MWh) shows that commercial electricity demand in Oklahoma expanded far more rapidly than national commercial demand.

Policy implication: Even after accounting for the negative allocative effect, regional factors (competitive + allocative) contributed nearly 6 million MWh, or roughly half of the state's total electricity sales growth. This pattern is consistent with large commercial load expansions, including data centers and other electricity-intensive commercial facilities. In short, **commercial demand growth is the central driver of Oklahoma's electricity sales acceleration in the 2020 to 2025 period**.

Industrial

Actual sales growth 2020 to 2025**:** +2,595,102 MWh (12.7%)

- National effect: +1,863,666
- Structural effect: –98,146
- Competitive effect: +655,764
- Allocative effect: +173,818

- Regional (competitive + allocative): +829,582

Interpretation: Industrial load gains accounted for approximately 20% of the state's load increase across the period. State industrial growth exceeded national industrial growth but at a much smaller magnitude than commercial.

Both competitive and allocative effects are positive, indicating that Oklahoma's industrial electricity demand grew faster than national industrial demand and that the state is slightly specialized in this stronger growth.

Policy implication: Industrial contributed meaningfully to load growth in Oklahoma, but not nearly at the scale of commercial.

Key Sales Shift-Share Findings

1. **Commercial demand explains the majority of Oklahoma's electricity sales growth.**
   Nearly half of total state growth is attributable to commercial competitive effects alone, reflecting rapid expansion in electricity-intensive commercial activity.
2. **Oklahoma's sales expansion was driven primarily by state-specific dynamics rather than national demand trends.**
   National demand growth explains less than half of the increase in electricity usage, while Oklahoma-specific sector growth accounts for the majority of the state's load expansion.
3. **Residential demand growth played a limited role in overall sales expansion.**
   Residential usage increased modestly and contributed only a small share of total sales growth.
4. **Industrial demand growth was positive but secondary.**
   Industrial usage expanded faster than national industrial demand but accounted for roughly one-third of the increase generated by commercial demand.
5. **Rapid commercial demand growth occurred alongside relatively restrained commercial price increases.**
   Together, the sales and price shift-share results indicate that Oklahoma's recent electricity expansion has been heavily concentrated in the commercial sector while commercial electricity prices have grown far more slowly than in other customer classes.

Electricity Demand Growth and Price Dynamics: Emerging Policy Tensions

Oklahoma's electricity market since 2020 presents a fundamental asymmetry: the customer class experiencing the most rapid demand growth paid the smallest price increases, while those with modest or declining usage bore the largest rate adjustments.

Between 2020 and 2025, total electricity sales increased 20.6% – more than double the 9.2% national increase. Nearly three-fourths of this growth occurred in the commercial sector, where sales expanded 48%, three times the national commercial growth rate. By comparison, industrial sales increased 12.7% and residential usage grew modestly.

Electricity prices, however, followed the opposite pattern. Commercial prices rose only 16.0% despite explosive demand growth, while residential prices increased 29.7% and industrial prices jumped 33.4%. This divergence occurred even as Oklahoma's overall average price increase (24.5%) remained below the national average (28.7%), preserving the state's competitive position.

From a cost allocation standpoint, this raises a critical question: are the infrastructure investments required to support rapid commercial expansion being funded proportionally by the customers driving that growth, or are residential and industrial ratepayers bearing a disproportionate share?

The data alone cannot answer this question. Average revenue per kWh reflects rate outcomes, not underlying cost-of-service determinations. Commercial customers may be paying their full allocated share of infrastructure costs even as their average rates rise more slowly – particularly if economies of scale, high load factors, or

different voltage delivery reduce per-unit costs. Alternatively, cost allocation decisions may be concentrating infrastructure burdens on residential and industrial classes to preserve commercial competitiveness.

What is clear is that Oklahoma's electricity growth model is now heavily reliant on commercial demand expansion. How the costs of supporting that expansion are distributed across customer classes will determine whether the state can sustain its commercial price advantage while maintaining residential affordability and industrial competitiveness.

Policy Questions for the Period Ahead

The asymmetry between demand growth and price outcomes suggests several critical questions for Oklahoma's regulatory framework:

1. **Infrastructure cost allocation:** How will generation, transmission, and distribution investments required to support commercial load growth be allocated across customer classes?
2. **Cross-class cost exposure:** To what extent are residential and industrial customers insulated from – or bearing the costs of – commercial expansion?
3. **Sustainability of commercial advantage:** Is Oklahoma's current commercial price position sustainable under continued high-load growth, or will infrastructure requirements eventually compress the commercial rate advantage?
4. **Rate design and economic development:** How will future rate structures balance economic development objectives with household affordability and industrial competitiveness?

In short, Oklahoma's electricity performance since 2020 demonstrates that rapid demand growth and sustained price competitiveness can coexist. Whether that balance persists will depend on how regulators, utilities, and policymakers address the emerging tension between commercial expansion and equitable cost recovery.

Electricity Demand and Pricing Dynamics in Virginia

Virginia provides a useful comparison case for Oklahoma because it has experienced some of the fastest electricity demand growth in the United States, largely driven by the expansion of large data centers and other data-intensive commercial activity. Over the past decade, Virginia has emerged as the largest data center hub in the United States, with Northern Virginia widely recognized as the global center of data center activity. The resulting expansion in electricity demand has significantly altered the composition of electricity consumption within the state.

Because Virginia hosts the largest concentration of data centers in the United States, it provides a natural benchmark for understanding how rapid commercial electricity load growth can reshape state electricity markets. To simplify the comparison with Oklahoma, the transportation sector is excluded from the discussion below. Transportation electricity sales are extremely small relative to the other sectors and can fluctuate substantially from year to year, making them less useful for understanding broader electricity demand patterns.

Figure 10 summarizes changes in electricity sales and prices in Virginia between 2020 and 2025. Total electricity sales increased from 117.3 million MWh in 2020 to 144.7 million MWh in 2025, a gain of 23.4%. However, this growth was not evenly distributed across sectors. Much like Oklahoma, nearly all of the increase occurred in the commercial sector.

Figure 10. Virginia Electricity Demand and Price Changes by Sector: 2020-2025

	Sales (MWh)			Price (¢/kWh)		
Sector	2020	2025	%Change	2020	2025	%Change
Residential	46,088,846	47,216,825	2.4%	12.03	15.28	27.0%
Commercial	53,526,846	83,623,857	56.2%	7.63	9.55	25.2%
Industrial	17,474,236	13,537,829	-22.5%	6.28	9.45	50.6%
Total	117,254,388	144,674,134	23.4%	9.16	11.41	24.6%

Source: U.S. Energy Information Administration Form EIA-861 and RegionTrack calculations

Notes: Transportation sector excluded

Commercial electricity sales increased 56.2%, rising from 53.5 million MWh to 83.6 million MWh over the period. This surge reflects the rapid expansion of data centers and other large commercial facilities in the state. By contrast, the other major sectors showed little or negative growth. Residential electricity consumption increased only 2.4%, while industrial electricity demand declined sharply, falling 22.5% during the period.

As a result, commercial users were the primary source of electricity demand growth in Virginia. The scale of the expansion is substantial: commercial electricity usage increased by more than 30 million MWh between 2020 and 2025.

The divergence between sectors produced a notable shift in Virginia's electricity demand structure. In 2020, commercial electricity sales were already slightly larger than residential usage. By 2025, the gap had widened dramatically, with commercial electricity demand far exceeding residential consumption. At the same time, industrial electricity usage contracted significantly, reinforcing the shift toward a commercial-dominated electricity demand profile.

Electricity price movements followed a different pattern. Residential and commercial electricity prices increased at broadly similar rates during the period. Residential electricity prices rose 27.0%, while commercial prices increased 25.2%. In contrast, industrial electricity prices increased far more rapidly, rising 50.6% between 2020 and 2025. The sharp increase in industrial electricity prices occurred alongside the decline in industrial electricity usage, making the industrial sector the most significant outlier in Virginia's electricity market during the period.

Comparing Virginia's experience with electricity trends in Oklahoma and nationally highlights how unusual recent patterns in Oklahoma have been. Figure 11 summarizes changes in electricity sales and prices in Virginia, Oklahoma, and the United States between 2020 and 2025.

Figure 11. Virginia, Oklahoma, U.S. Electricity Changes by Sector: 2020-2025

	Sales Change			Price Change		
Sector	Oklahoma	Virginia	U.S.	Oklahoma	Virginia	U.S.
Residential	5.3%	2.4%	3.4%	29.7%	27.0%	31.5%
Commercial	48.0%	56.2%	16.0%	16.0%	25.2%	26.6%
Industrial	12.7%	-22.5%	8.7%	33.4%	50.6%	29.3%
Total	20.6%	23.4%	9.2%	24.5%	24.6%	28.8%

Source: U.S. Energy Information Administration Form EIA-861 and RegionTrack calculations.
Notes: Transportation sector excluded

Three important patterns emerge from the comparison.

First, commercial electricity demand expanded far more rapidly in both Virginia and Oklahoma than in the nation as a whole. While commercial electricity sales increased 16% nationally, they rose 48% in Oklahoma and more than 56% in Virginia. Both states therefore experienced unusually strong commercial demand growth during the period, consistent with the expansion of large data-intensive facilities such as data centers. However, the magnitude of Virginia's commercial expansion was even larger than Oklahoma's.

Second, industrial electricity demand moved in very different directions across the two states. National industrial electricity sales increased modestly over the period, rising 8.7%. **Oklahoma's industrial demand increased somewhat more rapidly at 12.7%, broadly consistent with its historically strong industrial electricity base**. In contrast, Virginia's industrial electricity sales declined sharply, falling 22.5%, accompanied by a sharp increase in industrial prices. This decline represents a significant structural divergence from both the national pattern and Oklahoma's experience.

Third, electricity price changes also differed significantly across the two states. In Oklahoma, commercial electricity prices increased only 16% between 2020 and 2025 – far below the national commercial price increase of 26.6%. By contrast, Virginia's commercial electricity prices increased 25.2%, closely tracking national trends. Industrial electricity prices diverged even more sharply: Virginia's industrial prices increased more than 50%, compared with 33.4% in Oklahoma and roughly 29% nationally.

Taken together, Virginia's experience illustrates how rapid growth in data-intensive commercial activity can fundamentally reshape electricity price and demand patterns within a state. Nearly all of Virginia's electricity demand growth since 2020 has occurred in the commercial sector, while residential consumption remained essentially flat and industrial electricity usage declined sharply.

Oklahoma's experience shares one important feature with Virginia – rapid commercial electricity demand growth – but differs in a critical respect. In Oklahoma, **rapid commercial expansion occurred alongside relatively restrained commercial electricity price growth**. Virginia, by contrast, experienced price increases across all customer classes that were broadly aligned with or exceeded national trends.

The comparison therefore highlights an important point: rapid commercial electricity expansion can raise concerns about price pressures and cost allocation across customer classes, but it alone does not determine electricity price outcomes. Instead, the interaction between demand growth, generation capacity, regulatory policy, and rate design ultimately shapes how electricity costs evolve across customer classes.

Oklahoma's recent experience therefore stands out. Electricity demand growth accelerated rapidly, particularly in the commercial sector, yet retail electricity prices – especially commercial prices – have so far remained comparatively restrained relative to national trends.

Utility-Level Electricity Pricing

Statewide electricity price averages, while useful for national comparisons, obscure substantial variation across individual utilities. Providers operating under different ownership structures, regulatory frameworks, fuel portfolios, and customer compositions experienced markedly different price trajectories between 2020 and 2025 – particularly in their response to Winter Storm Uri and subsequent cost recovery decisions.

This section examines how electricity prices evolved across Oklahoma's major utilities during the period, with particular attention to the divergence between the state's two largest investor-owned providers.

Data Source and Coverage

Utility-level pricing data are drawn from the U.S. Energy Information Administration's Form EIA-861M, a mandatory monthly survey of prices paid by the end-use customers of electric utilities, retail energy providers, and distribution companies. The survey includes investor-owned utilities, public power providers, and selected electric cooperatives.

For Oklahoma, the monthly sample includes the state's major providers: Oklahoma Gas & Electric (OG&E), Public Service Company of Oklahoma (PSO), Empire District Electric Company (Empire), Grand River Dam Authority (GRDA), and several large electric cooperatives including Arkansas Valley Electric Cooperative (AVEC), Northeast Oklahoma Electric Cooperative (NOEC), Oklahoma Electric Cooperative (OKEC), and Verdigris Valley Electric Cooperative (Verdigris). OG&E, PSO, and Empire are Investor-Owned Utilities (IOUs), GRDA is a state-owned and operated public power provider, and the remaining firms in the survey are electric cooperatives.

Although the annual EIA-861 survey covers additional utilities, it currently extends only through 2024. The monthly dataset allows analysis through 2025 and includes the dominant providers. OG&E and PSO together account for roughly two-thirds of statewide electricity sales, and together with GRDA serve nearly three-fourths of end-use demand. As a result, pricing trends among these utilities strongly influence statewide averages.

Price Trends by Utility (2020–2025)

Figure 12 presents the full annual price series from 2015 through 2025 along with the cumulative price changes during the 2020–2025 period for electric providers in the monthly survey. The table illustrates both the evolution of utility pricing and the divergence in rate trajectories following the pandemic and Winter Storm Uri.

Figure 12. Oklahoma Electric Provider Annual Average Prices: 2015-2025

	Average price in cents per kilowatt hour (kWh)									
Year	**Statewide**	**OG&E**	**PSO**	**GRDA**	**NOEC**	**Empire**	**Verdigris**	**AVEC**	**OKEC**	**All Other**
2015	7.90	7.52	7.06	5.30	10.99	8.79	9.90	9.14	11.16	9.27
2016	7.83	7.87	6.44	4.53	10.50	8.68	10.52	9.64	10.51	9.43
2017	8.20	7.84	7.51	5.12	11.45	8.64	10.82	10.42	10.82	9.64
2018	8.09	7.39	7.76	5.00	11.55	8.88	10.70	10.17	10.64	9.65
2019	7.86	7.16	7.47	4.50	11.51	9.05	10.58	10.28	10.46	9.58
2020	7.63	7.05	6.71	4.37	11.34	9.38	10.55	10.31	10.50	9.86
2021	8.52	8.28	7.59	5.00	10.97	10.73	10.23	11.59	10.76	10.38
2022	10.05	10.25	9.30	6.28	10.91	12.36	10.03	12.53	11.59	11.23
2023	9.30	8.06	10.45	5.99	11.42	11.79	10.97	11.92	10.74	10.57
2024	9.09	8.52	9.21	4.91	12.19	11.74	11.70	12.37	10.66	10.64
2025	9.50	8.83	9.91	4.98	13.13	12.57	12.22	12.96	11.25	11.14
2020-2025	**Statewide**	**OG&E**	**PSO**	**GRDA**	**NOEC**	**Empire**	**Verdigris**	**AVEC**	**OKEC**	**All Other**
Change	1.87	1.78	3.20	0.60	1.79	3.19	1.67	2.65	0.74	1.28
%Change	24.5%	25.3%	47.8%	13.8%	15.8%	34.0%	15.8%	25.7%	7.1%	12.9%

Source: U.S. Energy Information Administration Form EIA-861M and RegionTrack calculations
Notes: Prices are annual weighted averages calculated from monthly data. Full firm names are: Arkansas Valley Elec Coop Corp (AVEC), Empire District Electric Co (Empire), Grand River Dam Authority (GRDA), Northeast Oklahoma Electric Co (NOEC), Oklahoma Electric Coop Inc (OKEC), Oklahoma Gas & Electric Co (OG&E), Public Service Co of Oklahoma (PSO), and Verdigris Valley Elec Coop Inc (Verdigris).

Investor-Owned Utilities

The most consequential pricing dynamics in Oklahoma occur among the state's investor-owned utilities, which serve the majority of electricity demand. OG&E and PSO together account for roughly two-thirds of statewide electricity sales, meaning changes in their rate structures largely determine the trajectory of the statewide average. The evolution of pricing between these two utilities therefore provides important insight into how electricity costs have shifted across Oklahoma service territories during the 2020 to 2025 period.

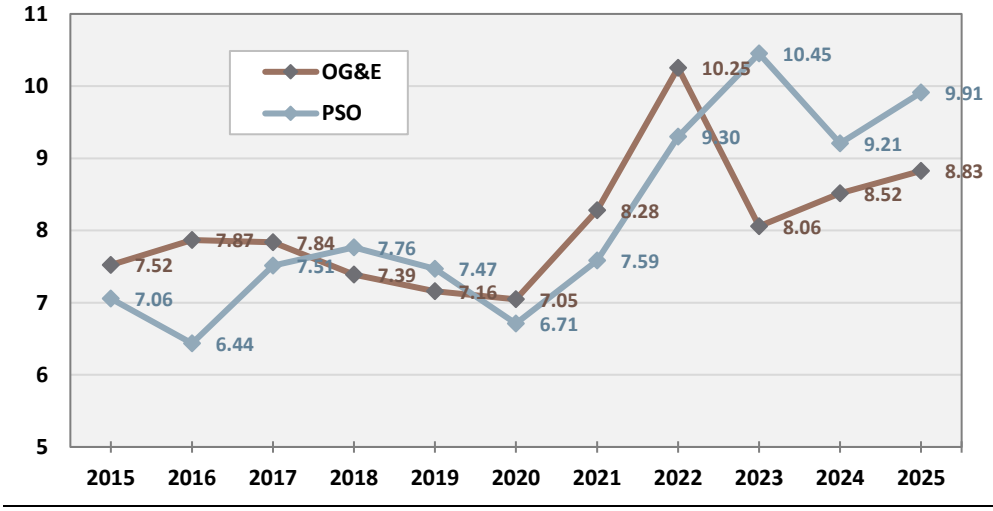
OG&E. OG&E increased average rates by 25.3% between 2020 and 2025, **closely aligning with the statewide increase of 24.5%**. Given its substantial share of total statewide electricity sales – roughly 40% – OG&E's pricing trajectory strongly influences the overall state average rate. In 2025, OG&E also reported one of the lowest average rates in Oklahoma at 8.83 cents per kWh, second only to GRDA and 0.67 cents below the state average of 9.50 cents.

PSO. PSO posted **the largest increase among major providers, with rates rising 47.8% over the period** – nearly double the increase statewide and by OG&E. By 2025, PSO's average rate was approximately 12% higher than OG&Es at 9.91 cents per kWh. This also exceeded the state average rate by 0.41 cents.

This divergence represents a significant shift in relative positioning between the state's two largest electricity providers (*see Figure 13*). Differences between the two undoubtedly reflect variations in fuel mix exposure, cost recovery timing, securitization treatment, and rate design following Winter Storm Uri. Regardless of cause, PSO customers experienced materially larger cumulative price increases over the period. This divergence between the state's two largest utilities is clearly visible in Figure 13, where PSO's price path rises much more sharply than OG&E's following the post-2021 price adjustments. **Both utilities subsequently experienced price reversals**, with OG&E's average price declining by 2.16 cents in 2023 and PSO posting a 1.24 cent reduction in 2024.

Figure 13. OG&E vs. PSO Electricity Price: 2015-2025

Average price in cents per kilowatt hour (kWh)



Source: U.S. Energy Information Administration Form EIA-861M and RegionTrack calculations
Notes: Prices are weighted annual averages calculated from monthly data.

Empire. Empire District Electric's rates increased 34.0% between 2020 and 2025 – above the statewide average but well below PSO's increase. Despite serving a relatively large share of commercial and industrial customers, Empire reports some of the highest average prices in the sample, reaching 12.57 cents per kWh in 2025. This outcome likely reflects the utility's smaller service territory in Oklahoma and the broader regional cost structure of its multistate operations. Empire's Oklahoma operations represent a relatively small portion of its overall system, which may also contribute to differences between its pricing trajectory and those of the state's larger utilities.

These differences highlight how utility-specific factors – such as service territory characteristics, generation portfolios, and regulatory cost recovery – can produce materially different price outcomes, even within the same statewide electricity market.

Public Power: GRDA

In contrast to the investor-owned utilities, Oklahoma's public power provider operates under a different ownership structure and pricing framework. These institutional differences can produce distinct pricing outcomes, particularly for large industrial customers. GRDA posted the smallest percentage increase among major providers, with rates rising only 13.8% between 2020 and 2025. GRDA continues to maintain the lowest average rates in the state at 4.98 cents.

Several structural factors contribute to the low rates offered by GRDA:

- Hydroelectric generation resources
- Cost-efficient wind, coal, and natural gas generation
- Public ownership and cost-of-service pricing
- Exemption from local ad valorem taxation

GRDA primarily serves large industrial customers and historically emphasizes stable, economic development-oriented pricing rather than market-based rate adjustments. This pricing approach represents an implicit economic development subsidy: by charging rates substantially below those of competing utilities, the state foregoes potential revenue that could otherwise accrue to the public entity. Unlike direct tax incentives or grants, this subsidy operates largely outside of the state budget process, making it a hidden component of Oklahoma's economic development strategy.

The economic value of this subsidy – the difference between GRDA's actual rates and the rates that would prevail under market-based pricing – represents a real cost to the state, even if it does not appear as a budget line item. This cost is not captured in the electricity price analysis presented earlier in this report, which focuses on rates paid by customers rather than foregone public revenue. Nevertheless, it represents an important dimension of Oklahoma's overall electricity cost structure and competitiveness strategy.

GRDA's pricing structure therefore reflects a fundamentally different operating model than the state's investor-owned utilities or rural cooperatives – one that prioritizes industrial attraction and retention over revenue maximization.

Electric Cooperatives

Electric cooperatives represent another distinct segment of Oklahoma's electricity market. These utilities primarily serve rural territories and therefore operate under different cost structures than the state's larger providers. Lower customer density and larger service areas typically increase distribution infrastructure costs, which often results in higher average electricity prices than those reported by investor-owned utilities.

Despite these higher baseline price levels, several cooperatives – including Northeast Oklahoma Electric Cooperative (NOEC), Verdigris Valley Electric Cooperative (Verdigris), and Oklahoma Electric Cooperative (OKEC) – recorded relatively modest rate increases between 2020 and 2025, ranging from roughly 7 to 16 percent and generally below the statewide average increase. However, their 2025 average price levels remain comparatively high, typically between 11 and 13 cents per kWh.

Arkansas Valley Electric Cooperative (AVEC) represents an exception within the cooperative group, posting a rate increase closer to the statewide average along with an above average price level.

The differences among cooperatives can reflect variation in local service territory characteristics, wholesale power supply arrangements, and distribution infrastructure costs across cooperative systems.

"All Other" Providers

The combined group of remaining smaller cooperatives and municipal utilities – which are deemed as "All Other" providers – posted a 12.9% price increase between 2020 and 2025, also below the statewide average increase. However, their average price level in 2025 remained relatively high at 11.14 cents per kWh, exceeding the rates reported by the state's largest investor-owned utilities.

Key Utility-Level Findings

Several structural themes emerge from the utility-level analysis.

1. **Divergence among major investor-owned utilities.**
   PSO customers experienced significantly larger cumulative rate increases than OG&E customers between 2020 and 2025, representing a notable shift in the relative pricing position of the state's two largest providers.
2. **Public power stability.**
   GRDA maintained both the lowest electricity prices in the state and the smallest percentage increase during the period.
3. **Higher baseline rates among cooperatives.**
   Many electric cooperatives continue to report higher average electricity prices than the major investor-owned utilities, although their rate increases during the period were generally more moderate.
4. **Smaller providers show similar patterns.**
   The combined group of smaller municipal utilities and cooperatives also posted relatively modest price increases, though their overall price levels remain above those of the state's largest utilities.
5. **Statewide competitiveness remains intact.**
   Despite variation across providers, Oklahoma's overall average electricity price remained among the lowest in the nation, ranking second lowest nationally in 2025.

Policy Implications

The utility-level pricing results reinforce several broader themes identified earlier in the report. Winter Storm Uri and subsequent fuel market volatility affected utilities differently depending on their customer mix, cost recovery timing, and regulatory treatment. As a result, electricity price trajectories varied across service territories. Some utilities – most notably PSO – experienced substantially larger cumulative price increases, while others such as OG&E tracked closer to the statewide average. Public power provider GRDA maintained comparatively stable and low price levels, while many rural electric cooperatives continued to report higher overall price levels but more moderate rate increases during the period.

Ownership structure also appears to be associated with differences in pricing outcomes. Public power providers, investor-owned utilities, and rural electric cooperatives operate under different cost structures, customer densities, and regulatory frameworks. In Oklahoma, these differences are reflected in the observed pricing patterns: GRDA maintained the lowest prices and smallest increase during the period, investor-owned utilities experienced more substantial rate adjustments but lower average prices, and many cooperatives continued to report higher average price levels but more moderate increases.

The divergence in pricing between PSO and OG&E is particularly consequential given their dominant share of statewide electricity demand. Sustained differences in rate trajectories across these service territories could influence business location decisions, industrial retention, and long-term residential affordability.

These pricing divergences raise an important question: are they driven primarily by differences in cost structures and storm recovery timing, or do they also reflect differences in underlying demand patterns? Understanding where electricity demand growth has occurred – and which utilities are serving that expansion – provides critical context for interpreting these pricing outcomes.

Electricity Sales Trends by Utility (2020-2025)

The final step in this section examines changes in electricity sales to end users at the utility level, with particular focus on commercial demand. Because utilities operate within defined service territories, statewide demand growth is typically reflected in the sales patterns of specific providers. Examining sales at the utility level therefore helps identify where recent load growth has occurred and which providers are serving that expansion.

Earlier findings in this report established two central themes:

1. Oklahoma significantly outpaced the nation in total electricity sales growth between 2020 and 2025.
2. That outperformance was overwhelmingly driven by rapid expansion in commercial usage – consistent with increased data-intensive commercial activity, including data centers.

The utility-level data confirm and sharpen those earlier conclusions.

Statewide Growth Concentrated in Commercial Usage

Figure 14 presents changes in total electricity sales, commercial sales, and the commercial share of total sales for OG&E, PSO, and the group of all other providers from 2020 to 2025. The table highlights the extent to which recent electricity demand growth has been concentrated in the commercial sector and within the service territories of the state's largest utilities.

Between 2020 and 2025, total **Oklahoma electricity sales increased by 12.8 million megawatt hours** (MWh), a 20.6% gain. Of that increase, **9.0 million MWh – or roughly 70% – occurred in the commercial sector**. This concentration mirrors the earlier shift-share findings showing that commercial growth accounted for the majority of Oklahoma's divergence from national demand trends.

Commercial usage increased 48% statewide during the period – three times the national commercial growth rate. By contrast, residential and industrial growth were comparatively modest.

Commercial electricity sales increased from **30%** of total statewide electricity sales in 2020 to nearly **37%** in 2025, reflecting a significant shift in the composition of electricity demand toward commercial and data-intensive activities.

Figure 14. Oklahoma Electric Provider Annual Sales: 2015-2025

	Total Sales (MWh)				Commercial Sales (MWh)				Commercial as a Share of Total Sales			
Year	State	OG&E	PSO	Other	State	OG&E	PSO	Other	State	OG&E	PSO	Other
2015	61,336,385	24,065,469	17,905,328	19,365,588	20,691,105	9,578,010	6,381,370	4,731,725	33.7%	39.8%	35.6%	24.4%
2016	61,516,554	24,194,369	18,284,543	19,037,642	20,695,703	9,770,955	6,522,280	4,402,468	33.6%	40.4%	35.7%	23.1%
2017	60,492,128	23,730,041	18,026,293	18,735,794	20,498,860	9,764,717	6,414,240	4,319,903	33.9%	41.1%	35.6%	23.1%
2018	64,575,316	25,398,037	18,840,233	20,337,046	21,229,143	10,255,967	6,429,354	4,543,822	32.9%	40.4%	34.1%	22.3%
2019	64,795,946	25,797,421	18,542,647	20,455,878	20,085,991	9,313,019	6,126,581	4,646,391	31.0%	36.1%	33.0%	22.7%
2020	62,299,305	24,590,220	17,702,245	20,006,840	18,698,988	8,405,475	5,872,283	4,421,230	30.0%	34.2%	33.2%	22.1%
2021	64,525,137	25,095,562	18,205,777	21,223,798	19,999,312	8,878,130	6,133,034	4,988,148	31.0%	35.4%	33.7%	23.5%
2022	69,486,942	27,295,200	19,140,765	23,050,977	22,211,526	10,084,665	6,449,414	5,677,447	32.0%	36.9%	33.7%	24.6%
2023	68,978,840	27,218,839	18,421,783	23,338,218	23,117,487	10,879,381	6,421,980	5,816,126	33.5%	40.0%	34.9%	24.9%
2024	72,083,773	29,384,975	19,127,158	23,571,640	25,412,391	12,782,432	6,952,135	5,677,824	35.3%	43.5%	36.3%	24.1%
2025	75,114,577	30,923,512	19,257,109	24,933,956	27,676,981	14,620,430	7,196,688	5,859,862	36.8%	47.3%	37.4%	23.5%
2020-2025	State	OG&E	PSO	Other	State	OG&E	PSO	Other	State	OG&E	PSO	Other
Change	12,815,272	6,333,292	1,554,864	4,927,116	8,977,993	6,214,955	1,324,405	1,438,633	70.1%	98.1%	85.2%	29.2%
%Change	20.6%	25.8%	8.8%	24.6%	48.0%	73.9%	22.6%	32.5%	-	-	-	-

Source: U.S. Energy Information Administration Form EIA-861M and RegionTrack calculations
Notes: Sales are in megawatt hours (MWh)

Utility-Level Contributions to Growth

OG&E

OG&E was the dominant contributor to Oklahoma's recent commercial electricity demand growth. **Nearly 70% of the statewide increase in commercial electricity sales between 2020 and 2025 occurred within OG&E's service territory**, making it the primary locus of the state's recent load expansion.

- Total OG&E sales increased by 6.3 million MWh (+25.8%) between 2020 and 2025, exceeding the state gain.
- Of that increase, 98% of the total (6.2 million MWh) occurred in the commercial sector.
- **OG&E alone accounted for nearly 70% of the statewide increase in commercial sales**.
- Its added commercial sales represent nearly half of the total increase in electricity consumption statewide over the period.
- OG&E's commercial sales as a share of total sales increased from 34% in 2020 to 47% in 2025.

Taken together, the data indicate that much of Oklahoma's recent electricity demand growth has been concentrated in commercial activity within OG&E's service territory.

Notably, OG&E achieved this expansion while increasing average prices by 25.3% – below the national rate of increase and closely aligned with the statewide average. This reinforces earlier findings that Oklahoma's commercial pricing moderation contributed materially to the state's improved price competitiveness.

PSO

PSO also experienced commercial growth, though at a smaller scale:

- Total sales increased by 1.6 million MWh.
- 1.3 million MWh (85%) of that growth occurred in commercial usage.

While PSO contributed meaningfully to statewide commercial expansion, its pricing trajectory differed sharply from OG&E's, with overall rates rising 47.8% over the same period. This divergence suggests that the relationship between load growth and pricing outcomes may vary significantly across service territories.

All Other Providers

The remaining providers combined increased total sales by 4.9 million MWh, but only 1.4 million MWh (29%) of that growth occurred in commercial usage.

In other words, outside of OG&E and PSO, growth was more diversified across sectors and less concentrated in commercial demand.

Rising Commercial Share of Total Sales

The commercial share of total statewide electricity sales increased from 30.0% in 2020 to 36.8% in 2025.

The shift is even more pronounced within OG&E's territory, where the commercial share rose from 34.2% to 47.3% over the period. Nearly half of OG&E's total electricity sales in 2025 were commercial.

This structural shift aligns closely with earlier findings:

- Sales shift-share analysis identified commercial demand as the dominant growth driver.
- Price shift-share analysis showed commercial rates grew much more slowly than residential and industrial rates.
- Utility-level data reveal that OG&E is at the center of this transformation.

Policy Implications

The utility-level production data reinforce several strategic themes emerging throughout the report:

1. **Oklahoma's Load Growth Is Commercially Concentrated**

   Nearly three-fourths of statewide growth since 2020 is commercial, and nearly half of total growth occurred within a single provider's commercial territory.

   This pattern is consistent with large-scale commercial expansions, including potential data center development.

2. **Commercial Expansion Has Occurred Alongside Competitive Pricing**

   Despite rapid commercial growth, Oklahoma's overall price increase remained below national growth. At the utility level, OG&E – the primary driver of commercial expansion – maintained rate increases near the statewide average and below national trends.

   This combination of strong commercial growth and moderated commercial price increases has strengthened Oklahoma's relative competitive position.

3. **Infrastructure and Cost Allocation Become Central**

   Sustained commercial growth of this magnitude will likely require continued investment in:

   - Generation capacity
   - Transmission infrastructure
   - Distribution upgrades

   How those costs are allocated across customer classes will determine whether:

   - Residential and industrial customers remain insulated from commercial expansion costs, or
   - Future rate trajectories begin to shift.

The divergence between OG&E and PSO in both pricing and load growth also underscores that territory-level dynamics matter. Much of this divergence may reflect differences in Winter Storm Uri cost recovery timing and customer composition, rather than underlying cost structures alone.

Synthesis with Earlier Findings

The convergence of findings across multiple analytical approaches – state-level shift-share decomposition, utility-level pricing trends, and sales patterns – reveals a consistent picture of Oklahoma's electricity market transformation since 2020. Commercial demand growth has been extraordinary and geographically concentrated, primarily within OG&E's service territory. At the same time, commercial electricity prices increased far more slowly than residential and industrial rates, preserving Oklahoma's competitive position even as the state added load at one of the fastest rates in the nation.

This commercially driven growth model distinguishes Oklahoma from national trends. Whether it persists will depend on how future electricity demand – particularly from large energy-intensive commercial users – is integrated into infrastructure planning, rate design, and the allocation of system costs across customer classes. The state's ability to balance rapid commercial expansion with residential affordability, industrial competitiveness, and equitable cost recovery will determine whether Oklahoma maintains its distinctive position in the national electricity market.

Summary and Key Findings

Oklahoma's electricity sector entered a period of significant change after 2020.

For much of the decade preceding the pandemic, electricity prices were stable nationally and in Oklahoma, and electricity policy was not a central economic concern. That changed rapidly in the post-pandemic period. National electricity prices surged, outpacing overall inflation and reversing years of relative stability. At the same time, electricity demand – long considered mature and slow-growing – began expanding again in select states, driven largely by data-intensive commercial activity.

Oklahoma was exposed to both forces simultaneously: a national price surge and unusually strong growth in electricity demand. Yet the state's outcome diverged in an important way from the national pattern in the form of relatively restrained price increases.

Preserved Competitiveness in a Rising-Price Environment

Between 2020 and 2025, U.S. electricity prices increased 28.7%. Oklahoma prices rose 24.5% – substantial, but materially less than the national increase. In level terms, Oklahoma's average price rose from 7.63 cents per kWh to 9.50 cents, while the U.S. average increased from 10.59 cents to 13.63 cents. After a temporary erosion of competitiveness during Winter Storm Uri, Oklahoma re-established itself as one of the lowest-cost electricity states in the country, ranking second lowest nationally in 2025.

The shift-share decomposition clarifies why. Most of the price increase in Oklahoma reflects national forces – fuel market volatility, wholesale market pressures, and general inflation. National trends alone would have pushed Oklahoma prices even higher. Instead, the state's actual increase was smaller than the national benchmark, preserving its relative price advantage through state competitiveness effects.

Importantly, this outcome was not driven by changes in customer composition. It resulted primarily from how prices evolved within individual customer classes, primarily modest commercial price increases.

Commercial Pricing and Growth

The central feature of Oklahoma's electricity experience since 2020 is the commercial sector.

While residential prices increased 29.7% and industrial prices rose 33.4%, commercial prices increased only 16.0% – well below the 26.6% national commercial increase. This moderation accounts for most of Oklahoma's preserved price competitiveness. Shift-share analysis confirms that more than half of Oklahoma's load growth reflects state-specific competitive effects rather than national demand trends, with commercial expansion accounting for roughly 70% of total load growth.

At the same time, electricity demand growth in Oklahoma has been unusually strong. Total electricity sales increased 20.6% between 2020 and 2025 – more than double the 9.2% national increase. Nearly three-fourths of that growth occurred in the commercial sector, where usage expanded 48%.

In structural terms, Oklahoma's recent electricity expansion has been overwhelmingly commercial.

The combination of rapid commercial load growth and restrained commercial price growth is therefore the defining feature of the state's electricity experience during the post-pandemic period. This dynamic has strengthened Oklahoma's economic development position at a time when electricity pricing has become increasingly important to business location decisions, particularly for data centers and other energy-intensive commercial facilities.

Utility-Level Divergence

Utility-level data reveal substantial variation behind the statewide averages, with Winter Storm Uri cost recovery playing a central role in explaining these differences.

PSO customers experienced rate increases nearly double the statewide average during the period, while OG&E's pricing trajectory tracked closer to the state benchmark. The difference appears to reflect how utilities chose to recover extraordinary storm costs: utilities that brought costs through rates more rapidly experienced sharper near-term price increases, while those that spread recovery over longer periods through securitization deferred the impact across more years.

Public power provider GRDA maintained both the lowest rates in the state and the smallest percentage increase among major providers. GRDA's pricing structure reflects a fundamentally different operating model than investor-owned utilities, one oriented toward industrial attraction rather than revenue maximization. This below-market pricing represents an implicit economic development subsidy that operates outside of transparent budget processes but constitutes a real economic cost.

Commercial demand growth has also been geographically concentrated. Nearly three-fourths of Oklahoma's commercial electricity expansion occurred within OG&E's service territory, where commercial usage now approaches half of total load. This geographic concentration reinforces that territory-specific dynamics – rather than national market forces alone – are increasingly shaping Oklahoma's electricity outcomes. Regulatory decisions at the utility level now play an outsized role in determining statewide results.

Cross-State Comparison: Virginia

The comparison with Virginia highlights what makes Oklahoma's trajectory distinctive. Both states experienced extraordinary commercial demand growth driven by data-intensive activity. Virginia's commercial sales expanded even more rapidly than Oklahoma's. Yet Virginia's electricity prices across all customer classes tracked national trends or exceeded them, while Oklahoma's commercial prices remained comparatively restrained. This suggests that rapid commercial expansion alone does not determine pricing outcomes. Instead, regulatory frameworks, cost allocation decisions, and rate design ultimately shape how electricity costs evolve across customer classes. Oklahoma's restrained commercial pricing during a period of explosive commercial growth reflects policy choices, not market inevitability.

Emerging Tensions in Cost Allocation and Rate Equity

Demand growth and price outcomes have diverged across customer classes in a striking pattern: demand growth has been overwhelmingly commercial, price increases have been concentrated in residential and industrial classes, and commercial rates have risen far more slowly despite rapid expansion in load.

This pattern does not, by itself, demonstrate cross-subsidization or inequitable cost allocation. The price data used in this report measure average revenue per kilowatt-hour, not the underlying cost-of-service determinations used in regulatory rate design.

Nevertheless, the combination of rapid commercial load growth and comparatively modest commercial price increases raises important forward-looking policy questions. Sustained expansion in commercial demand – particularly from large energy-intensive facilities – can require substantial investment in generation capacity, transmission infrastructure, and fuel procurement.

How those costs are ultimately allocated across customer classes will influence residential affordability, industrial competitiveness, and the durability of Oklahoma's commercial price advantage.

The Deferred Cost of Winter Storm Uri

Winter Storm Uri continues to shape the electricity policy environment in Oklahoma and will for many years.

Although securitization smoothed the immediate impact of extraordinary 2021 fuel costs, repayment obligations remain embedded in customer bills for decades. As a result, the full economic cost of the storm will continue to influence electricity prices over time.

If those costs had been recovered immediately rather than financed over time, electricity prices since 2021 would have been substantially higher.

In effect, a portion of the price shock was deferred rather than eliminated. Oklahoma's current price competitiveness therefore reflects both sector-level pricing outcomes and a financing structure that spreads storm-related costs over time.

Managing Future Growth and Rate Equity

Taken together, the evidence indicates that Oklahoma has preserved its electricity price competitiveness during a period of national price inflation while simultaneously experiencing one of the fastest demand growth rates in the country.

The policy challenge ahead is no longer responding to a national price shock. Oklahoma has already navigated that episode. The challenge now is managing growth and rate structure, particularly in the commercial sector.

If commercial expansion continues at recent rates, infrastructure planning, fuel procurement strategy, and rate design decisions will determine whether Oklahoma can sustain both rapid demand growth and its relative price advantage. The allocation of future capital investment across expanding commercial loads, existing industry, and households will play a central role in shaping the next phase of electricity policy in the state.

In sum, Oklahoma's electricity story since 2020 is not simply one of rising prices. It is a story of structural divergence – between sectors, between utilities, and between demand growth and price trajectories.

Appendix A. Four-Part Shift-Share Decomposition

This appendix provides a technical overview of the four-part shift-share framework used in the analysis of Oklahoma electricity prices and sales. The method decomposes the change in a regional outcome into components attributable to national trends, structural (mix) differences, competitive performance, and allocative (specialization) effects.

The approach is rooted in the Esteban-Marquillas (1972) extension of the traditional three-part shift-share model, which separates the regional (competitive) effect into two components: a pure competitive effect and an allocative (specialization) effect.

Reference:
Esteban-Marquillas, J.M. (1972). *A reinterpretation of shift-share analysis*. Regional and Urban Economics, 2(3), 249-255.

A.1 Notation

Let:

- $i \in \{R, C, I\}$denote sectors:
  - R= Residential
  - C= Commercial
  - I= Industrial
- $OK_{i,0}$= Oklahoma value in sector $i$at base year (2020)
- $OK_{i,1}$= Oklahoma value in sector $i$at end year (2025)
- $US_{i,0}$, $US_{i,1}$defined analogously

Define growth rates:

$$g_i^{US} = \frac{US_{i,1} - US_{i,0}}{US_{i,0}}$$
$$g_i^{OK} = \frac{OK_{i,1} - OK_{i,0}}{OK_{i,0}}$$

Aggregate national growth:

$$g^{US} = \frac{\sum_i U\,S_{i,1} - \sum_i U\,S_{i,0}}{\sum_i U\,S_{i,0}}$$

Total Oklahoma change:

$$\Delta OK = \sum_i (O\,K_{i,1} - OK_{i,0})$$

A.2 Three-Part Shift-Share (Baseline)

The traditional three components are:

1. **National Effect (N)**
2. **Structural / Mix Effect (S)**
3. **Regional / Competitive Effect (R)**

For each sector i:

National Effect

$$N_i = OK_{i,0} \cdot g^{US}$$

This measures how much Oklahoma would have changed if it had grown at the overall U.S. rate.

Structural (Industry Mix) Effect

$$S_i = OK_{i,0} \cdot (g_i^{US} - g^{US})$$

This captures whether Oklahoma is concentrated in sectors that grew faster or slower nationally.

Regional (Competitive) Effect

$$R_i = OK_{i,0} \cdot (g_i^{OK} - g_i^{US})$$

This measures Oklahoma's sector-specific deviation from national growth.

A.3 Four-Part (Esteban-Marquillas) Decomposition

The four-part method decomposes the regional effect into:

- Competitive Effect (C)
- Allocative Effect (A)

Define:

$$OK_{i,0}^{*} = OK_0 \cdot \frac{US_{i,0}}{US_0}$$

where $OK_0$is total Oklahoma base value and $US_0$is total U.S. base value.

This is the **homothetic allocation** – the level Oklahoma would have in sector $i$if its structure matched the U.S.

1. National Effect

$$N_i = OK_{i,0} \cdot g^{US}$$

2. Structural Effect

$$S_i = OK_{i,0} \cdot (g_i^{US} - g^{US})$$

3. Competitive Effect

$$C_i = OK_{i,0}^{*} \cdot (g_i^{OK} - g_i^{US})$$

This isolates Oklahoma's pure performance effect assuming national structure.

4. Allocative Effect

$$A_i = (OK_{i,0} - OK^*_{i,0}) \cdot (g_i^{OK} - g_i^{US})$$

This captures whether Oklahoma is over- or under-represented in sectors where it performs differently from the nation.

Total Change Identity

For each sector:

$$\Delta OK_i = N_i + S_i + C_i + A_i$$

And in aggregate:

$$\Delta OK = \sum_i (N_i + S_i + C_i + A_i)$$

A.4 Interpretation for Oklahoma Electricity Analysis

Residential (R)

- Structural effect reflects whether residential prices or sales grew faster nationally than overall electricity.
- Competitive effect captures Oklahoma's residential growth deviation from national residential trends.
- Allocative effect measures whether Oklahoma's residential weight amplified or dampened that deviation.

Commercial (C)

Particularly important in this analysis:

- Structural effect reflects national commercial growth relative to total growth.
- Competitive effect captures Oklahoma's deviation from national commercial trends.
- Allocative effect measures whether Oklahoma's commercial concentration magnifies that deviation.

Industrial (I)

- Structural effect measures national industrial growth relative to total growth.
- Competitive effect reflects Oklahoma's industrial growth relative to national industrial growth.
- Allocative effect captures specialization interaction.

A.5 Special Case: Total Electricity Price

When applying shift-share to total average price:

- Structural and allocative effects equal zero by construction.
- Only national and competitive effects remain.

This occurs because total price already reflects the weighted average across sectors – there is no additional structural composition to evaluate at the aggregate level.

A.6 Policy Interpretation

The four-part structure allows policymakers to distinguish between:

- Broad national market forces (fuel markets, inflation, wholesale prices)
- Sector composition differences
- State-specific pricing or demand dynamics
- Specialization effects that may amplify sectoral divergence

This distinction is particularly important when evaluating:

- Commercial load growth (e.g., data centers)
- Infrastructure investment needs
- Cost allocation across customer classes
- Long-run rate stability

Applying Shift-Share to Prices vs. Quantities

The shift-share framework can be applied to both electricity **sales volumes (kWh)** and **average prices (cents per kWh)**. While the algebraic structure of the four-part decomposition remains the same, the economic interpretation differs in important ways.

Understanding this distinction is essential for interpreting the Oklahoma electricity results.

A.7 Shift-Share Applied to Electricity Sales (Quantities)

When applied to electricity **sales volumes**, the framework decomposes changes in total kWh into components attributable to:

- National demand growth
- Structural composition of demand across sectors
- Oklahoma-specific growth performance
- Specialization (allocative) effects

Key Properties

1. **Additivity Across Sectors**

Electricity sales are additive:

$$Q^{Total} = Q_R + Q_C + Q_I$$

As a result:

$$\Delta Q^{Total} = \sum_i \Delta Q_i$$

Sector-level shift-share components sum directly to the total decomposition.

2. **Economic Interpretation**

For quantities:

- The **national effect** reflects overall U.S. electricity demand growth.
- The **structural effect** reflects Oklahoma's exposure to faster- or slower-growing sectors nationally.
- The **competitive effect** captures whether Oklahoma's sectoral demand grew faster or slower than national demand in that sector.
- The **allocative effect** reflects whether Oklahoma is specialized in sectors where it performs differently from the nation.

This makes shift-share particularly intuitive when applied to load growth, industrial expansion, or commercial demand increases such as data centers.

A.8 Shift-Share Applied to Electricity Prices

When applied to **average prices**, the interpretation changes because prices are weighted averages rather than additive quantities.

Total average price is defined as:

$$P^{Total} = \frac{\sum_i (P_i \cdot Q_i)}{\sum_i Q_i}$$

This has two important implications.

1. Prices Are Not Additive

Unlike quantities:

$$P^{Total} \neq P_R + P_C + P_I$$

Therefore:

- Sector-level price decomposition components do **not** sum across sectors to equal the total price decomposition.
- The four-part decomposition must be performed separately at:
    - The total price level
    - Each sectoral price level

This explains why sector-level results cannot simply be aggregated to replicate the total price result.

2. Structural and Allocative Effects at the Total Level

When shift-share is applied to **total average price**, the structural and allocative effects are zero by construction.

Why?

Because total average price already incorporates the sector weights in its calculation. There is no additional mix effect to evaluate – the mix is embedded in the weighted average.

Thus, at the aggregate price level:

$$\Delta P^{Total} = National + Competitive$$

Only two components remain:

- National effect (broad U.S. price trends)
- Competitive effect (Oklahoma-specific price deviation)

At the sector level, however, all four components remain meaningful.