KELI

Kentucky Energy

September 18, 2026

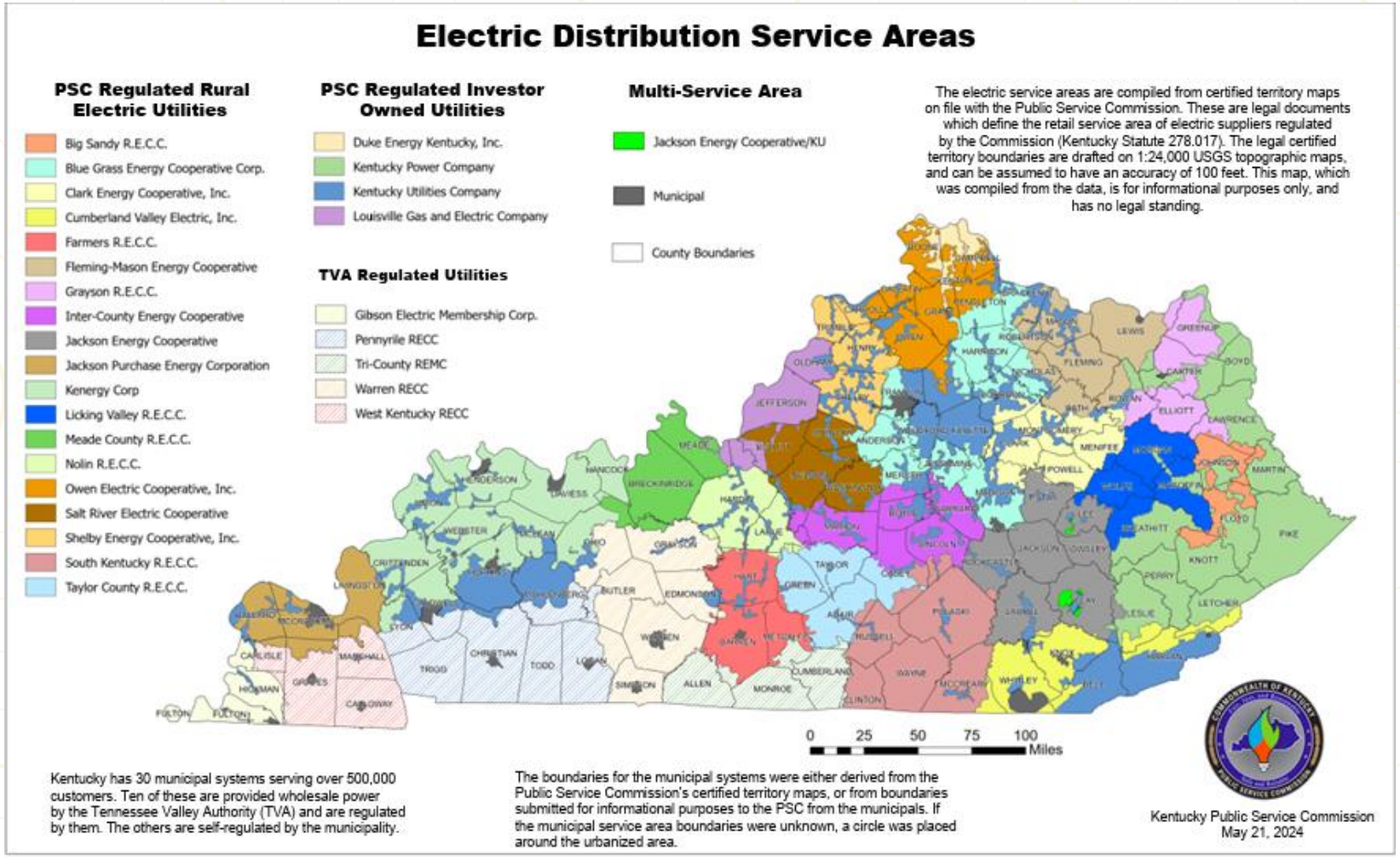
Lighthouse Energy Institute

Who We Are

LEI is an independent, nonpartisan think tank. Our mission is to provide information that improves the quality of energy and environmental institutions and policies. LEI achieves this by conducting honest, robust research and education.

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Kentucky


Electric Distribution Service Areas
PSC Regulated Rural Electric Utilities
Big Sandy R.E.C.C.
Blue Grass Energy Cooperative Corp.
Clark Energy Cooperative, Inc.
Cumberland Valley Electric, Inc.
Farmers R.E.C.C.
Fleming-Mason Energy Cooperative
Grayson R.E.C.C.
Inter-County Energy Cooperative
Jackson Energy Cooperative
Jackson Purchase Energy Corporation
Kenergy Corp
Licking Valley R.E.C.C.
Meade County R.E.C.C.
Nolin R.E.C.C.
Owen Electric Cooperative, Inc.
Salt River Electric Cooperative
Shelby Energy Cooperative, Inc.
South Kentucky R.E.C.C.
Taylor County R.E.C.C.
PSC Regulated Investor Owned Utilities
Duke Energy Kentucky, Inc.
Kentucky Power Company
Kentucky Utilities Company
Louisville Gas and Electric Company
TVA Regulated Utilities
Gibson Electric Membership Corp.
Pennyrile RECC
Tri-County REMC
Warren RECC
West Kentucky RECC
Multi-Service Area
Jackson Energy Cooperative/KU
Municipal
County Boundaries
The electric service areas are compiled from certified territory maps on file with the Public Service Commission. These are legal documents which define the retail service area of electric suppliers regulated by the Commission (Kentucky Statute 278.017). The legal certified territory boundaries are drafted on 1:24,000 USGS topographic maps, and can be assumed to have an accuracy of 100 feet. This map, which was compiled from the data, is for informational purposes only, and has no legal standing.
0 25 50 75 100
Miles
Kentucky has 30 municipal systems serving over 500,000 customers. Ten of these are provided wholesale power by the Tennessee Valley Authority (TVA) and are regulated by them. The others are self-regulated by the municipality.
The boundaries for the municipal systems were either derived from the Public Service Commission's certified territory maps, or from boundaries submitted for informational purposes to the PSC from the municipals. If the municipal service area boundaries were unknown, a circle was placed around the urbanized area.
Kentucky Public Service Commission
May 21, 2024

Rates and service

- *Since 1934, the primary statutory directive of utility regulation in Kentucky revolves around:*
  - *Rates*
    - *Fair, just and reasonable*
  - *Service*
    - *Adequate, efficient and reasonable*
- *Most everything in retail utility regulation comes back to one or both of these principles.*

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Incentive regulation

- *Utilities in Kentucky are not competitive businesses, but instead have their rates and service regulated by the PSC*
- *Historically, there was a concern around the duplication of the same service, leading to the inefficient investment of capital*
- *Electric utilities, for instance, were provided defined service territories: They have an obligation to serve everyone who demands service in that territory*
- *A state granted monopoly creates two primary problems: risk of poor service, and monopoly profits in excess of costs*
- *Solution: regulate the utility's rates and service*

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Incentive regulation, continued

- *The rate regulation of monopoly utilities is a function of costs*
  - *Since society has concerns about the prices a monopoly would charge, including IOUs charging rates in excess of costs or publicly-owned utilities charging rates below costs, rates are created based on the costs incurred or expected to be incurred by a utility*
- *However, different entities have different incentives*
  - *For profit (Shareholder owned) v. Not for profit (Customer Owned)*
    - *For profit entities have a profit motive*
    - *Customer-owned entities may have a motive to keeps costs low (too low), which can degrade service*
      - *Water Districts- depreciation*
      - *Distribution Cooperatives- Vegetation Management*

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Incentive regulation, continued

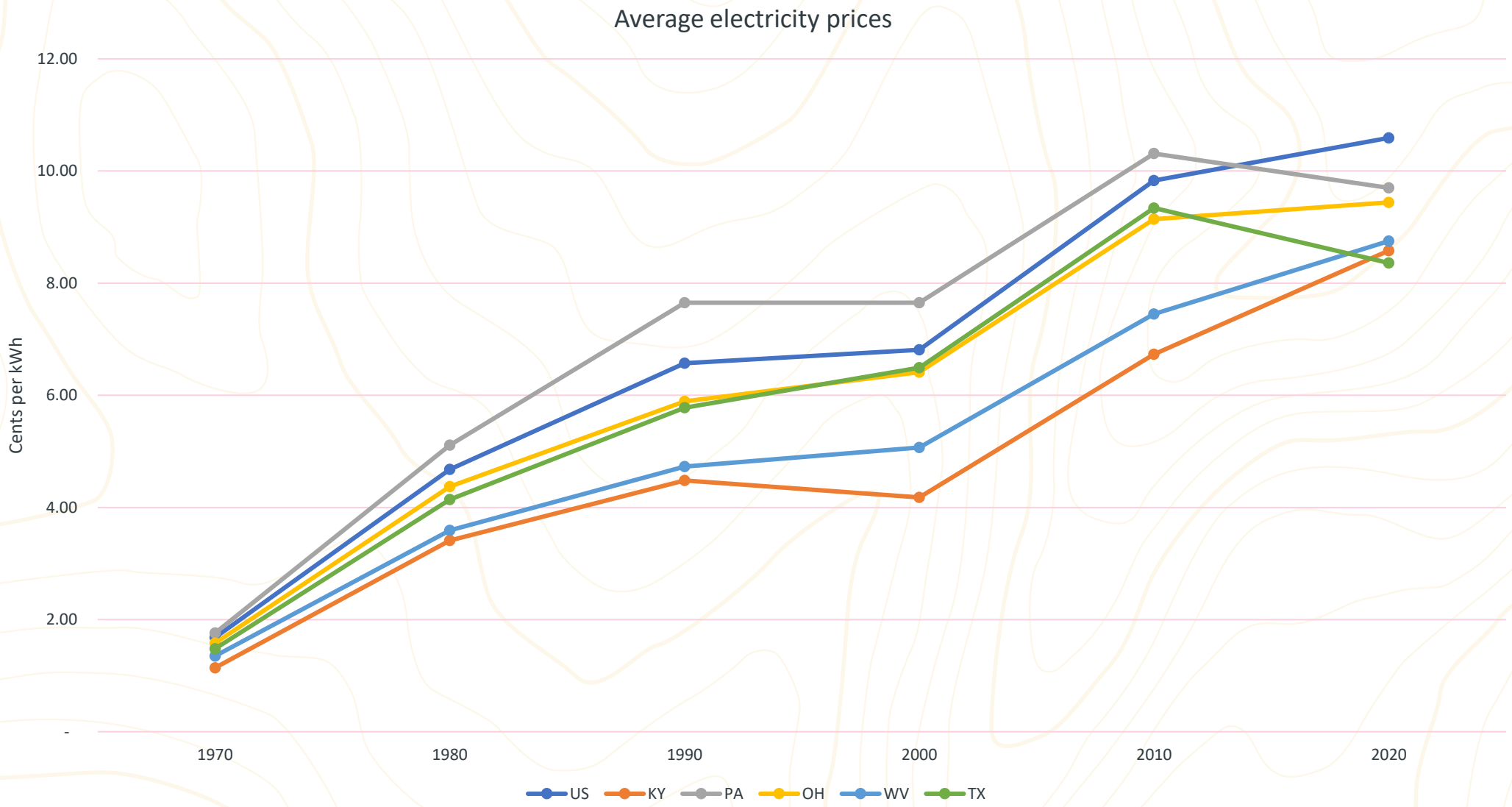
- *Investor-owned utilities make more profit the more they invest*
  - *This is assuming the cost of equity capital is constant*
  - *The PSC determines the cost of equity capital in rate cases, to ensure that the utility shareholders' rate of return on their equity investments are commiserate with the risk experienced by the investment*
- *Since IOUs earn a return on investment, if investments go up, so do profits.*
  - *It's this incentive to increase certain costs, namely capital costs, between rate changes, that is one of the primary differences between IOUs and RECCs*

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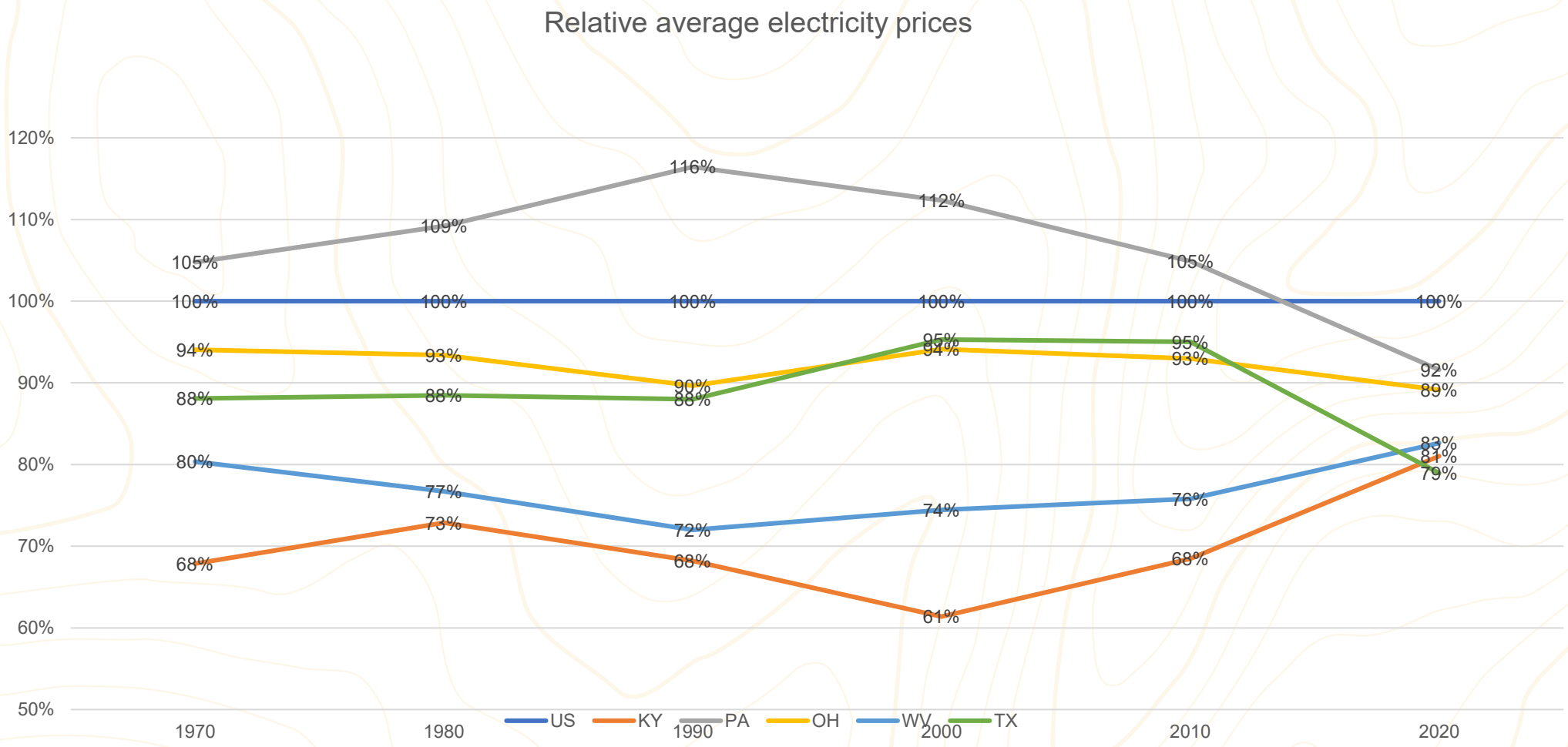
Affordability

- *Affordability and economic competitiveness*
  - *Absolute and relative cost of electricity is a prime consideration for residential and industrial sectors alike*
  - *Between 2020 and 2024, US electricity rates increased 22%, consistent with CPI*
  - *PSC is best placed to address overall costs, not address affordability on a micro level*
- *Barriers to supply and innovation contribute to unaffordable rates*
  - *Ownership and incumbency shouldn't inhibit innovation*
    - *Regulatory and legal limitations to innovation and new entry (new use models, new capital, technology, DERs)*
  - *Obviate or negate bias that is contrary to consumer interest*
    - *Utility capital bias doesn't lend itself to efficient use of current investments*

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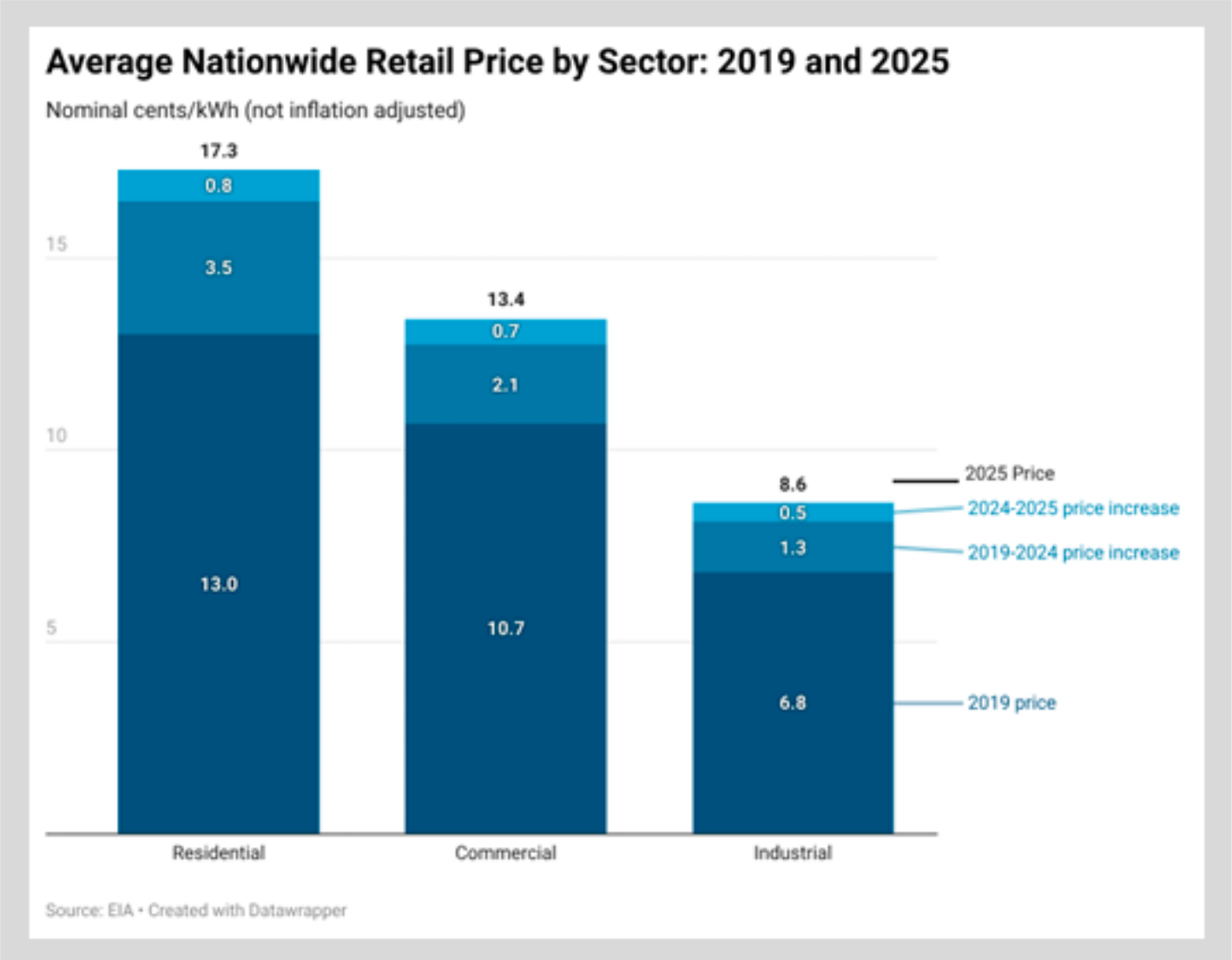
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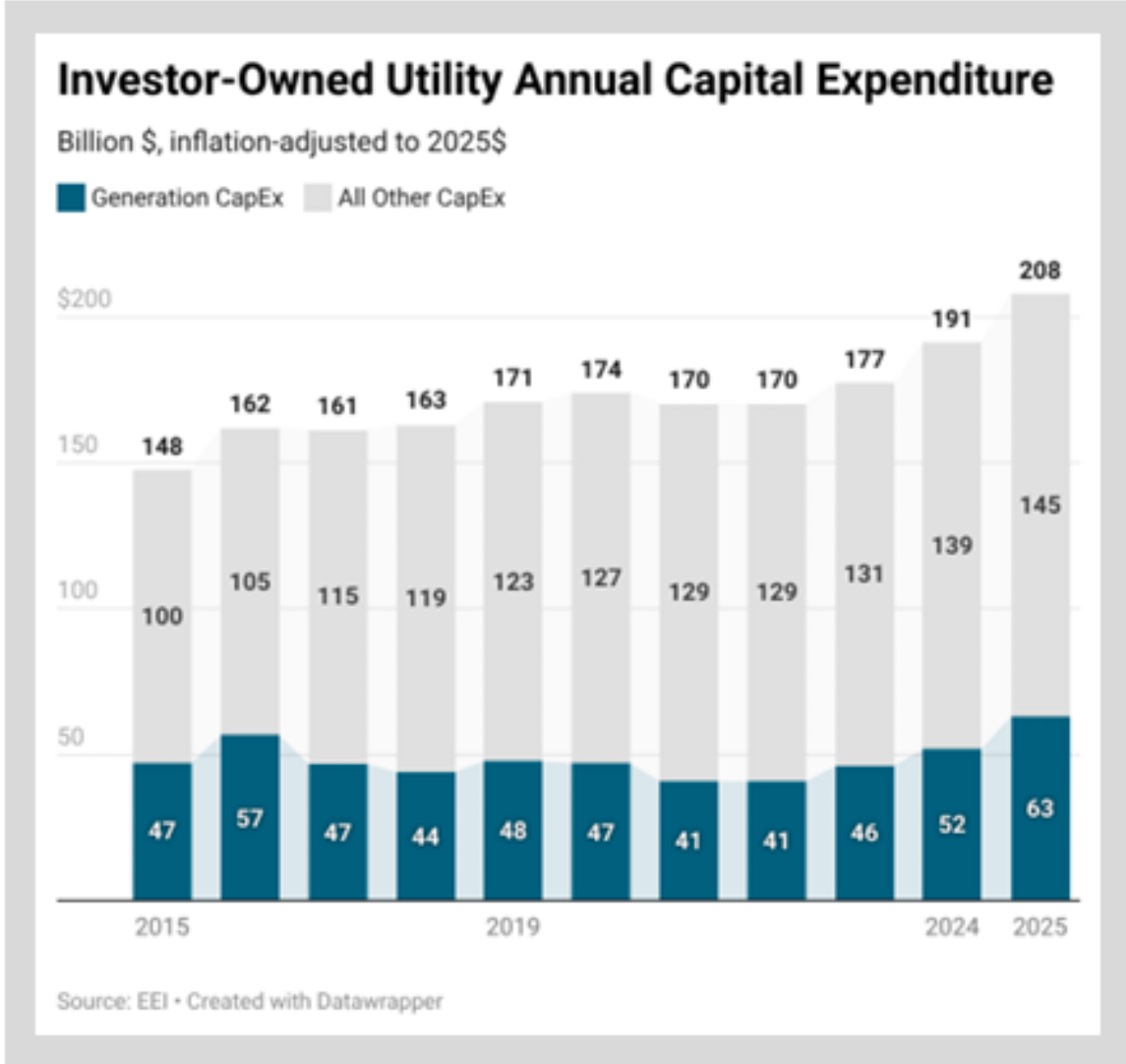
Residential customers have faced larger recent retail electricity price increases than have commercial and industrial customers

- Residential prices are higher and have risen faster than C&I
- From 2019 to 2025 (nominal):
  - Residential up: 33%
  - Commercial up: 26%
  - Industrial up: 27%
- Continues a longer-term trend of increasing gap between residential and C&I prices
- From 2024 to 2025 (nominal):
  - Residential up: 5.0%
  - Commercial up: 5.2%
  - Industrial up: 6.0%



Increased generation CapEx influenced the YoY change in retail prices in a variety of states, in part driven by anticipated load growth

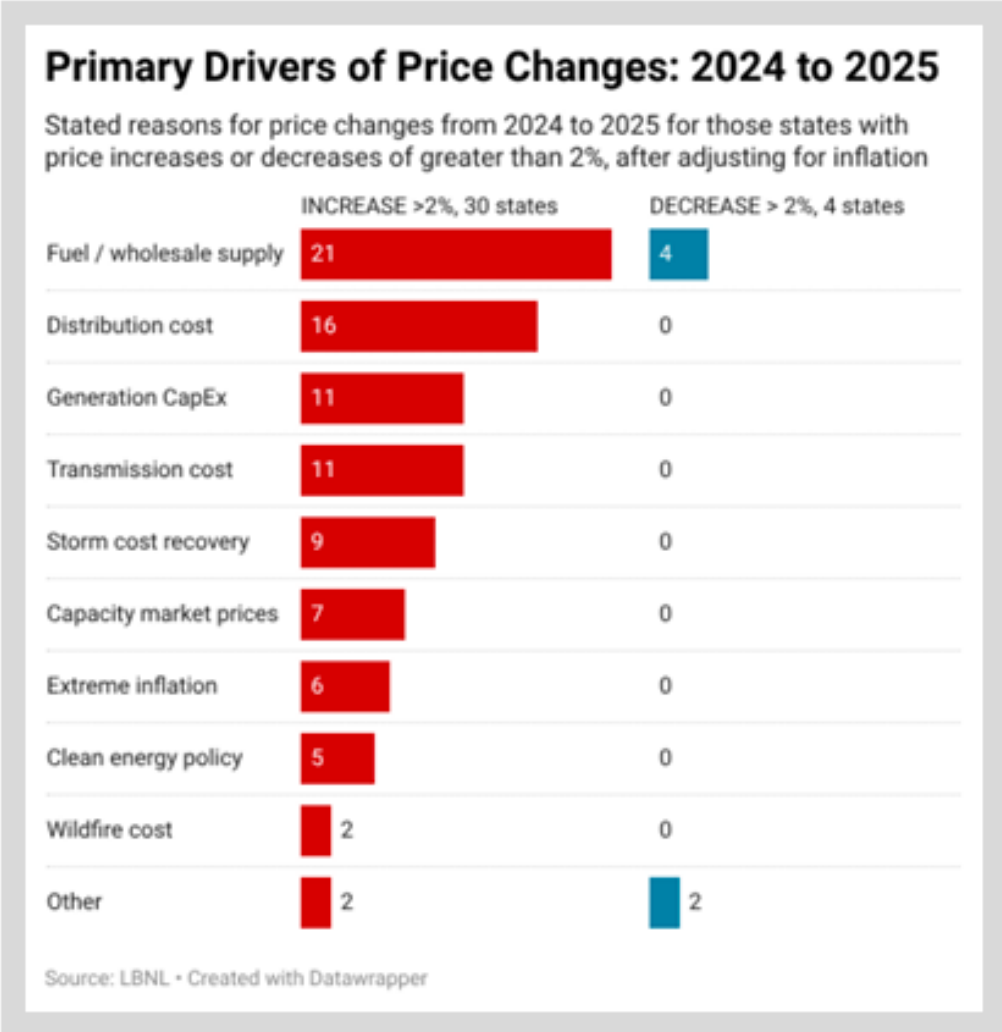
- Annual investor-owned utility (IOU) generation CapEx increased **22% in 2025** in inflation-adjusted 2025$, after increasing **13% in both 2024 and 2023**
  - Following many years of flat CapEx spending
  - IOU CapEx is recovered over asset lifetimes, so price impacts are delayed, can grow w/ time
- Increased CapEx was driven by load growth, as well as supply-chain constraints and higher costs for most generation types
- CapEx impacted YoY prices in **11 states**, e.g.:
  - TN: TVA's 5.25% rate increase in late 2024 in part to fund construction of new generation
  - IN: Cost recovery for NIPSCO's investments in solar and storage resulted in a price increase
  - SC: Duke raised rates by 8.7% in late 2024 to cover cost of gas, nuclear, solar, and hydro



Note: Data prior to 2015 not available via latest EEI public data release

Primary YoY drivers: fuel & wholesale supply; distribution costs; cost of new generation; transmission costs; storm recovery; capacity prices

- Focused on states with larger inflation-adjusted price increases (>2%, 30 states) or decreases (>2%, 4 states)
- Reviewed filings, rate cases, tariffs, news, press releases, other analyses to broadly assess the primary drivers for year-over-year (YoY) all-sector average price changes
- Figure summarizes our assessment for states with **increases (red)** or **decreases (blue)**



The few states that experienced larger reductions in inflation-adjusted prices largely did so via lower fuel prices (sometimes from delayed reductions after previous increases at the onset of the Ukraine-Russia war)

Note: YoY trends are subject to various state ratemaking idiosyncrasies and will tend to emphasize certain drivers over others; drivers reported for individual states are likely to change in future years and vary if assessed over longer time periods

https://eta-publications.lbl.gov/sites/default/files/2026-03/retail_price_trends_2026_edition.pdf

Macro affordability opportunities

- *Reducing barriers to building (supply and delivery)*
- *Having a customer-centric energy focus*
  - *Customers, not government or regulated industries, should determine supply and demand*
    - *Knowledge problem with central planning (see utility load forecasts)*
  - *Wires and poles should be invested in to the extent necessary or efficient, not preferable*
    - *Customer need, not investment preference, EPS growth- Shortcoming of COSS reg.*
- *Mandates likely increase cost burdens*
  - *Public policy mandates drive up prices*
    - *Hardcoded generation dictates (RPS, retirement bans, forced retirements, etc.)*
    - *Subsidies for mature technologies drive inefficient investments and unaffordability (nuclear subsidies, renewable tax credits, etc.)*

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Who is responsible for resource adequacy?

- *It depends!*
  - *Primarily the role of a state, especially in traditionally regulated, vertically integrated states such as Kentucky:*
    - *PSC—reviews and approves utility investments in generation*
    - *Integrated Resource Plans—15-year forecast filed by jurisdictional utilities 3 years*
  - *Not all states are vertically integrated, some are deregulated/retail competition: TX, CA, MD, IL, MI, OH, PA, NJ, DE*
- *Also—North American Electric Reliability Council; Federal Energy Regulatory Commission, RTOs/ISOs.*
  - *RTO- Regional Transmission Organization*
  - *Deregulated states depend on wholesale markets, like RTOs, for resource adequacy*

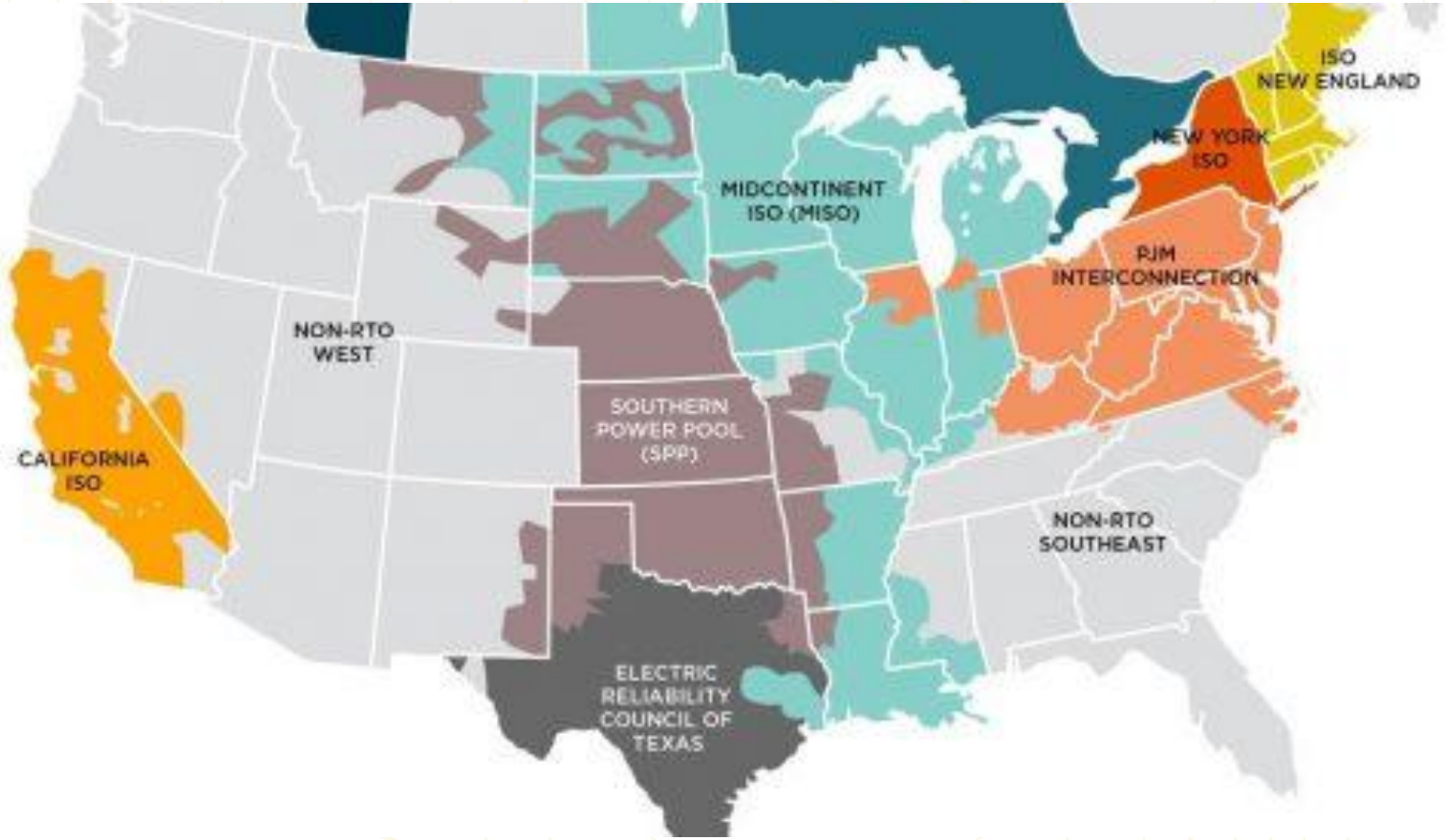
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Resource adequacy – retail/PSC regulation

- *Integrated Resource Planning (807 KAR 5:058)—prescribes rules for regular reporting and commission review of load forecasts and resource plans of electric utilities to meet future demand with an adequate, reliable supply of power within their service areas.*
- *Each utility files triennially—includes historical and projected demand, resource, and financial data, and other operating performance and system information.*
- *IRPs contain a 15-year planning horizon.*
- *IRPs include summary of forecasts of energy and peak demand; economic and demographic assumptions; planned resource acquisitions, new power plants, transmission improvements, etc.*
- *Intervenors; Formal Hearing*

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RTOs/ISOs



MISO:

- *Big Rivers Electric Corporation*

PJM:

- *East Kentucky Power Cooperative*
- *Duke Energy Kentucky*
- *Kentucky Power*

Over at least the past decade—PJM and MISO have been assessing operational, planning, and market impacts of adding increasing amounts of wind and solar power.

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Changes to consider in RA planning

- *Greater detail in IRPs- include dynamic changes to transmission and distribution system, not just generation; better, more frequent data*
- *Greater stratification of what contribution different types of generation make to reliability*
- *Greater emphasis on modeling- increased and changing demand; electrification; supply and demand resources; energy efficiency*
- *Supply side resources- what kind of generation is even available?*
- *More flexibility required; greater variability with reserve margins*
- *Gas-electric coordination*
- *Greater interconnection amongst utilities, RTOs and within entire interconnections (Eastern, Western, Texas)*

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New energy conversations in KY

- *BYOG*
  - *Changes in technology*
    - *What is old is new again*
  - *Changes in demand*
- *Nuclear Power*
- *Risks and benefits*
  - *Devil is in the detail*
  - *What risks (or costs) are customers willing to tolerate?*

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Response to data centers

- *General call for DCs to pay their own way, with some demanding excess payment (some DCs willing to do so to maintain social license)*
- *Some responses to DC*
  - *WH ratepayer protection pledge*
  - *LG&E/KU EHLF tariff*
  - *Big Rivers/Terawulf direct access agreement*
  - *NIPSCO GenCo*
  - *WV Microgrid*
  - *Utah SB 132*
  - *Executive Order*

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Power used to be the constraint

- *But it doesn't seem to be the case anymore*
  - *This risks overbuilding power supply to meet demand that otherwise can't materialize*

Supply Chain Constraints: What are They and Which Companies?

Data center development relies on a small set of physical systems that must be delivered and installed before capacity can be energized. Each system has different lead times, supplier concentration, and degrees of flexibility. Our model calibrates supply ceilings for each constraint annually from 2022A through 2030E. EPC/Labor is the binding constraint in 2026E at 10.4 GW, with cooling nearly co-binding at 11.4 GW. The two converge in 2027E (EPC/Labor at 12.1 GW, Cooling at 12.2 GW), after which cooling becomes the binding constraint from 2028E onward.

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Source: Jefferies, All the Data Center Demand in the World, Still Not Enough Supply, J. Petersen

Thank you!

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