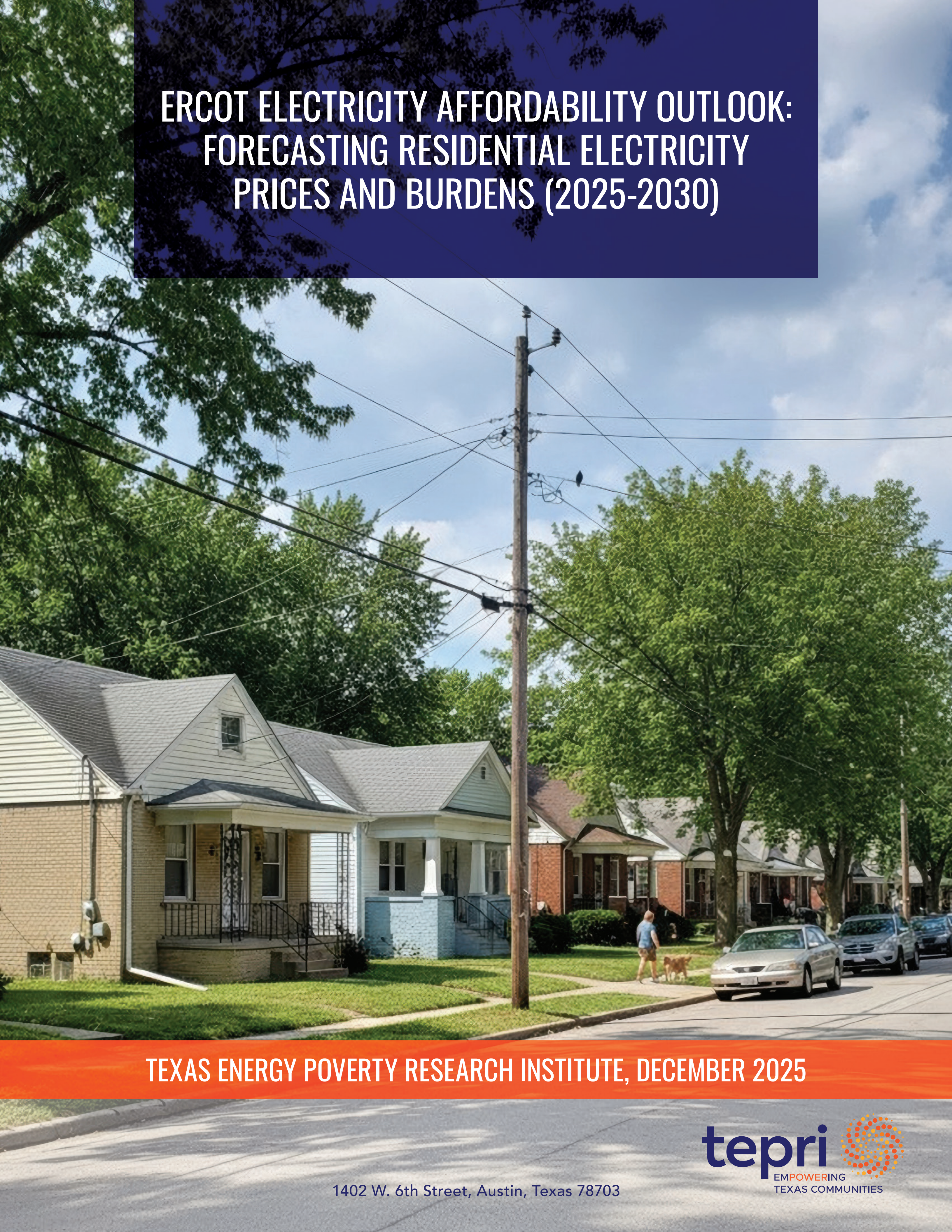

ERCOT ELECTRICITY AFFORDABILITY OUTLOOK: FORECASTING RESIDENTIAL ELECTRICITY PRICES AND BURDENS (2025-2030)

TEXAS ENERGY POVERTY RESEARCH INSTITUTE, DECEMBER 2025

1402 W. 6th Street, Austin, Texas 78703

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EMPOWERING
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ABOUT TEPRI

TEPRI advances equitable solutions for affordable, reliable, and clean energy to underserved communities so all people can thrive.

Founded in 2015, TEPRI is accelerating the move towards an energy system that is affordable, reliable, sustainable, and supports healthy, thriving communities. We work in partnership with stakeholders from the energy sector and community-based organizations to conduct research, create tools for practitioners, and demonstrate new models that can scale for widespread impact. Our work improves the systems that enable clean energy solutions to reach underserved communities.

- TEPRI is providing cutting-edge solutions for an equitable energy landscape.
- TEPRI has a diverse stakeholder base, including representatives from the energy industry, technology sector, and community-based organizations who align with our mission.
- TEPRI is an organization of passionate learners—we research, explore, and consistently evaluate how to have a deeper impact on people's lives.

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LIST OF ABBREVIATIONS

4CP	Four Coincident Peak
AEP	American Electric Power
AMI	Area Median Income
DER	Distributed Energy Resource
DR	Demand Response
EAG	Energy Affordability Gap
EBE	Electricity Burden
ERCOT	Electric Reliability Council of Texas
HUD	U.S. Department of Housing and Urban Development
ISO	Independent System Operator
LMI	Low-to-Moderate Income
LNG	Liquefied Natural Gas
OBBBA	One Big Beautiful Bill Act
PUCT	Public Utility Commission of Texas
REPs	Retail Electric Providers
RTC	Real-Time Co-Optimization
STEP	Strategic Transmission Expansion Plan
SVI	Social Vulnerability Index
T&D	Transmission and Distribution
TDU	Transmission and Distribution Utility
TEPRI	Texas Energy Poverty Research Institute
VPP	Virtual Power Plant

EXECUTIVE SUMMARY

We all need energy. Access to affordable electricity is foundational to how we live in the modern world; it is determinative to economic stability, quality of life, and health. While Texans have historically paid competitive retail electricity prices, their average bills have remained among the highest in the country, with 50% of low-and moderate-income (LMI) people reporting that they struggle to pay their energy bills most months and 72% reporting that they cut back on basic household needs such as food and clothing to pay their bills.[1]

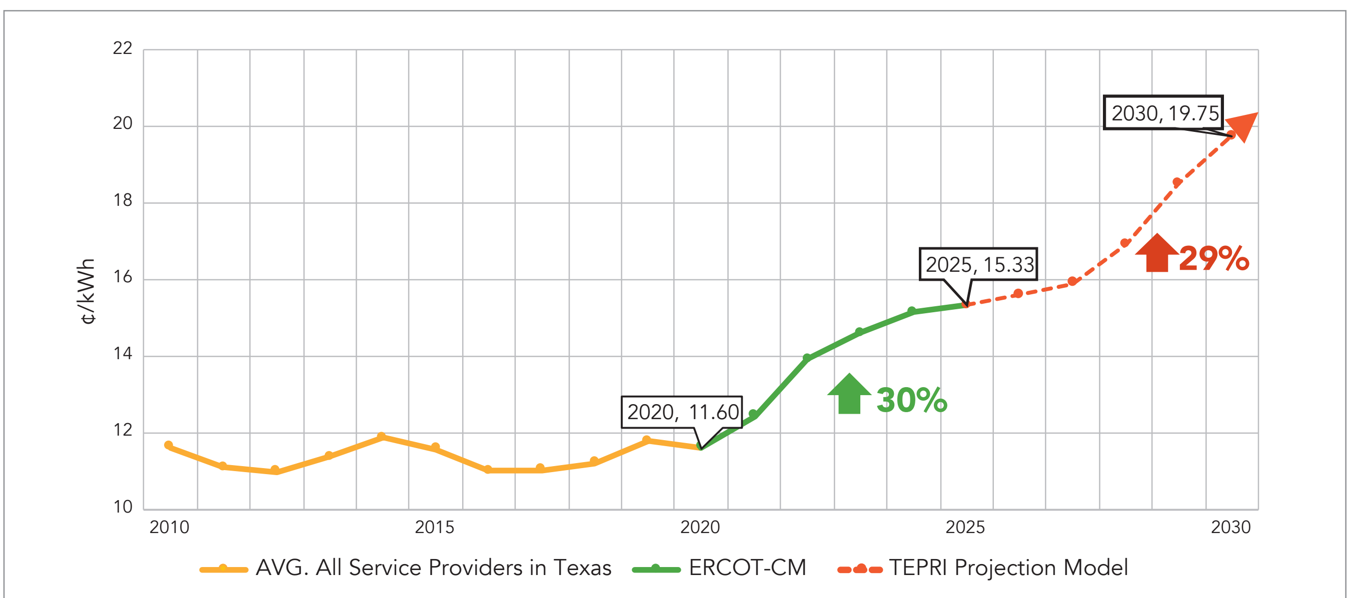
Looking ahead, prices are projected to rise another 29 percent by 2030, largely due to transmission and distribution investment and cost recovery.

Electricity demand within the Electric Reliability Council of Texas (ERCOT), which serves more than 90% of the state's electric load, is projected to grow by approximately 58%[2] between 2025 and 2030. Planned capital investments in transmission and distribution, as well as tightening generation margins over time, are expected to exert substantial upward pressure on residential electricity rates, which will disproportionately impact LMI households.

TEPRI's *ERCOT Electricity Affordability Outlook: Forecasting Residential Electricity Prices and Burdens (2025-2030)* evaluates the affordability of electricity for LMI households, identifies the primary drivers of rising electricity costs, and forecasts expected price increases in the ERCOT Competitive Retail Market[i] and their impacts on affordability over the next five years. The paper presents forecasted retail residential price changes within the geographic footprint of ERCOT's three largest transmission and distribution utilities (TDUs)—Oncor, CenterPoint, and AEP Texas—and evaluates how these changes will affect electricity burden and affordability gaps for low-income households.

TEPRI finds that between 2021 and 2025, average residential electricity prices in the ERCOT Competitive Retail Market rose by roughly 30 percent, adding $35–$40 per month to the typical LMI household bill. Looking ahead, rates are projected to rise another 29 percent by 2030, largely due to transmission and distribution investment and cost recovery. These investments—totaling over $58 billion from major

Figure 1. Texas Average Residential Electricity Price 2010–2030 (¢/kWh)



i For the purposes of this analysis, "ERCOT Competitive Retail Market" refers to data combined for the three major ERCOT TDUs residential customers. TNMP and LP&L were excluded because they serve less than 5% of the load in ERCOT. Municipal Electric Utilities and Electric Cooperatives were beyond the scope of this analysis.

TDUs and an additional $38 billion in ERCOT-approved transmission projects—are essential for grid modernization and reliability, but they also exert persistent upward pressure on retail prices.

For LMI households, these increases translate into significant affordability challenges. By 2030, the average electricity burden[ii] is expected to rise from 6.7 percent to 8.2 percent of LMI household income, and the share of bills deemed unaffordable will climb from 25 percent to nearly 40 percent. TEPRI deems electricity burdens over 5% to be unaffordable. In dollar terms, this means the average annual affordability gap will double from $420 in 2025 to $863 in 2030. These pressures compound other household vulnerabilities already reflected in TEPRI's Community Voices in Energy Survey.

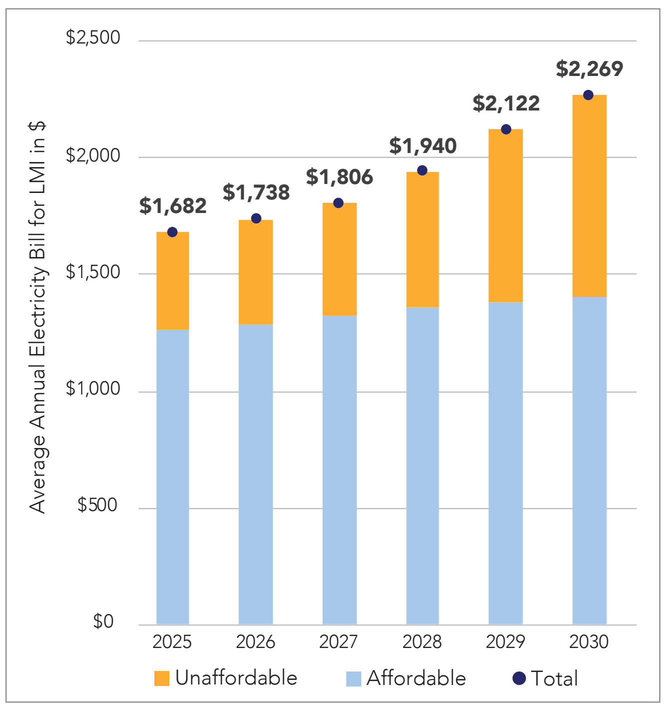
Key findings:

- In Texas's warm climate, roughly 80% of household energy spending goes toward electricity, as most homes rely on electric HVAC systems for both cooling and heating. This high dependence makes Texans' bills especially sensitive to electricity rate increases.
- Average retail residential electricity prices in Texas are lower than the US average but higher, and rising at a faster rate, than peer states with similar climates.
- Average nominal residential electricity prices in the ERCOT Competitive Retail Market have increased by approximately 30% since 2020, representing an estimated increase of $450 per year from 2020 to 2024.[iii] At the same time, Texas's minimum wage has not increased from $7.25 since 2009.[3]
- TEPRI modeled electricity prices for 2025-2030, are projected to rise by another 29%, primarily driven by planned, large-scale investments in transmission and distribution. Electricity supply-related increases are projected to begin in 2028 and accelerate after 2030.
- TEPRI considers *Electricity Burden* above 5% unaffordable. Modelled price increases would push average LMI electricity burdens from 6.7% to 8.2% and increase affordability gaps[iv] from $420 to $863 annually.

Our projections are conservative estimates based on known infrastructure investments and current forecasted wholesale electricity costs. A number of other factors, such as natural disasters, material and labor costs, lower than expected renewable energy project development, and localized supply and demand constraints, could drive bills up more than projected.

Ensuring electricity remains both reliable and affordable is central to Texas's long-term economic vitality and social well-being. As ERCOT navigates record load growth and modernization demands, continued policy design will be essential to balance investment with affordability so that all Texans, regardless of income, can share in the benefits of a secure, resilient, and robust energy future.

Figure 2. ERCOT Annual Electricity Bill Increase Over 5 Years



ii The percentage of household income allocated to electricity expenses.

iii Not adjusted for inflation.

iv Defined as the average dollar value that electric bills exceed what LMI households can afford.

1. INTRODUCTION

Access to affordable electricity is foundational to how we live in the modern world; it is determinative to economic stability, quality of life, and health. Every social indicator is tied to access to affordable and reliable energy. Historically, Texans have paid some of the lowest retail residential electricity prices in the country. However, despite relatively low rates, many of Texas' estimated 4.1 million low-to-moderate income (LMI) households, as defined by incomes of 80% or less of area-wide median income,[4,5] still experience pronounced electricity burdens.[6] Despite the growing availability of low-cost solar and wind on the grid, electricity affordability in Texas is under increasing pressure due to substantial investments in our transmission and distribution system as a result of population growth, rising energy demand from data centers and large industrial loads, and extreme weather events.

The ERCOT system covers 75% of Texas geographically and serves more than 90% of the state's total electric load. Electricity demand within ERCOT is projected to grow by approximately 58% over the next five years, with some forecasts showing significantly greater growth. This surge in demand necessitates substantial investments in grid modernization, transmission and distribution infrastructure, and supply. Texas Transmission and Distribution utilities (TDUs), such as Oncor and CenterPoint, have announced extensive capital plans totaling over $57 billion[7] from 2026 to 2035, largely as a result of legislative mandates requiring utility resilience investments after Winter Storm Uri. AEP Texas has likewise committed approximately $940 million toward its own grid resilience and modernization initiatives under the same statewide resiliency framework.[8] Additionally, the Public Utility Commission of Texas (PUCT) has approved $38 billion of additional utility investments, including plans to build a new 765,000-volt "power superhighway" aimed at improving grid reliability and supporting electrification of oil and gas operations in West Texas.[9] Utilities recover infrastructure costs (plus a rate of return) from all ratepayers, and these cost increases will be spread across all customer classes.

> The U.S. Department of Housing and Urban Development considers households with total incomes of 80% or less of the area median to be low-to-moderate income (LMI).[4, 5]

Billions of dollars for additional investments in electric power plants and storage will be made by competitive generation and storage developers and vertically integrated utilities to serve this demand growth. The costs of those investments and the electricity the produce could increase that portion of the average Texas household electric bill.

Although these investments are necessary for long-term system reliability and capacity, they can also place upward pressure on electricity rates. LMI households feel the effects more acutely, as electricity is often a non-discretionary commodity that consumes a larger share of their incomes. Additionally, residential rates are consistently higher on a cents per kWh basis than commercial and industrial rates.

Against this backdrop of rapid demand growth and major increases in capital investment, this paper evaluates electricity affordability for LMI households in the ERCOT region, identifies and analyzes primary drivers of rising electricity costs, and forecasts how these factors are expected to affect affordability and electricity burden for LMI communities from 2025 to 2030.

2. ERCOT OVERVIEW

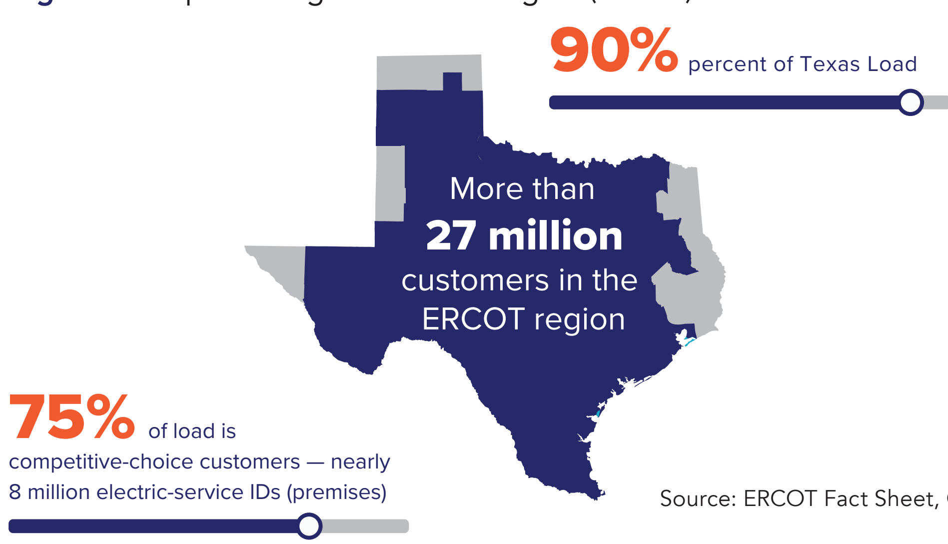
Many factors in ERCOT's regulatory structure and wholesale market design affect retail affordability in Texas. This section provides an overview of ERCOT's system characteristics, explains how its wholesale and retail markets function, and outlines the key components of retail residential prices that determine what Texas households ultimately pay for electricity.

ERCOT serves as the independent system operator (ISO) responsible for grid reliability and for facilitating the state's competitive wholesale and retail electricity markets. ERCOT manages an interconnected electric system that spans more than 75% of Texas's land area and serves more than 90% of its electric load.[10] The three largest utilities in the ERCOT competitive market, Oncor, CenterPoint, and AEP, serve an estimated 2.5 million LMI residential households, or approximately 63% of the state's total LMI population.[11] Unlike most U.S. regions, ERCOT operates independently from other ISOs, meaning that supply, demand, and investment decisions within its footprint directly affect electricity prices for households in the ERCOT territory with little direct influence from other regions.

As an ISO, ERCOT's key responsibilities[12] include:

- Operating and coordinating the flow of electricity from generation and storage providers across the transmission system in real time, in conjunction with operating a real-time wholesale electricity market,
- Maintaining the system reliably by performing regular assessments on whether generation resources and transmission facilities are adequate to meet expected electricity demand,
- Facilitating the operation of the competitive wholesale electricity market to allow retail electricity providers (REPs) to purchase power to serve retail customers' demand,
- Planning for transmission additions and upgrades,
- Administering the retail switching process for customers who want to move from one retail electric provider to another, and
- Administering the interconnection process for new generation, storage, and certain large loads, including managing the interconnection queue and conducting studies to ensure reliable and efficient integration into the ERCOT grid.

Figure 3. Map Showing the ERCOT Region (in blue) within the State of Texas



Source: ERCOT Fact Sheet, October 2025

2.1 ERCOT System Characteristics

ERCOT contains over 1,250 utility-scale generating units (as of August 2025), representing 180 GW installed capacity, and more than 54,100 miles of high-voltage transmission lines to deliver electricity to retail customers.[13] Additionally, 6 GW of distributed energy resources (DER), primarily small-scale solar and batteries, are connected to the ERCOT grid and represent a 25% year-over-year increase since 2015.[14] Table 1 and Figure 4 illustrate ERCOT's installed capacity in gigawatts by resource (as of September 2025). Figure 5 presents the annual electricity generated in gigawatts-hours by resource (as of October 2025).

Table 1. ERCOT Total Installed Capacity by Resource[15]

Resources	GW	%
Natural Gas	66	38%
Coal	14	8%
Wind	40	23%
Solar	32	18%
Energy Storage	14	9%
Nuclear	5	3%
Other	2	1%
TOTAL	173	100%

Installed capacity, also called nameplate capacity, represents the maximum electrical output a power plant or system is designed to produce under ideal conditions. The actual electricity produced over time (in megawatt-hours or gigawatt-hours) will vary by resource, demand, and maintenance.

Figure 4. ERCOT Total Capacity (GW) by Resource, as of September 2025[16]

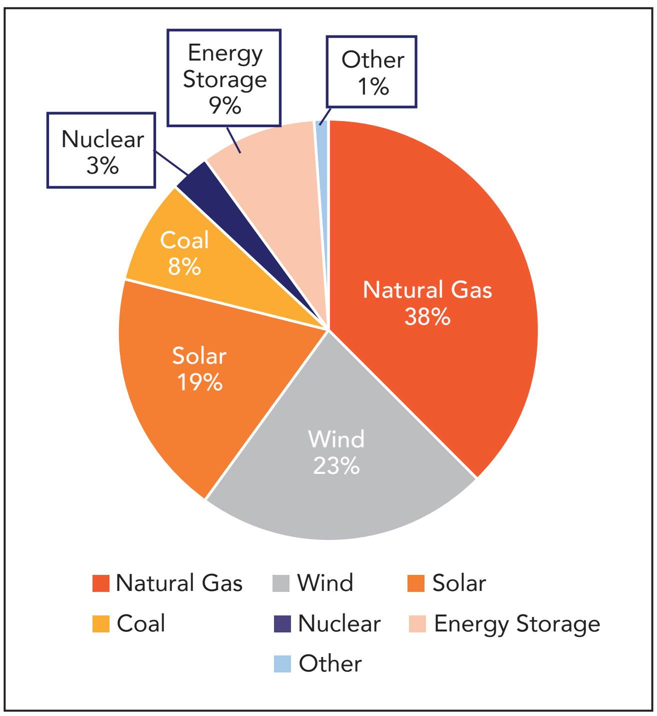
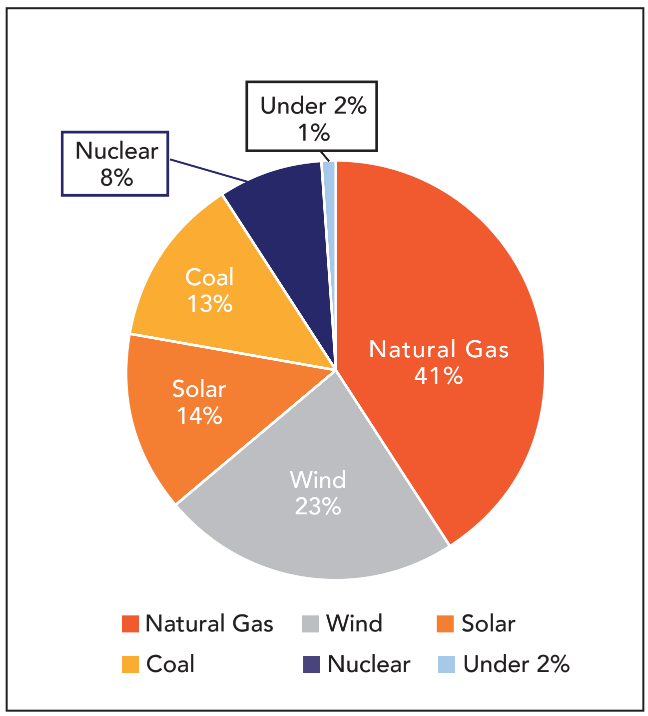


Figure 5. ERCOT Annual Energy Production (GWh) by Resource, as of October 2025[17, v, vi]



v Chart excludes Wholesale Storage Load because this resource category can have negative values.

vi Other includes petroleum coke, distillate fuel oil, and any other or unknown fuel.

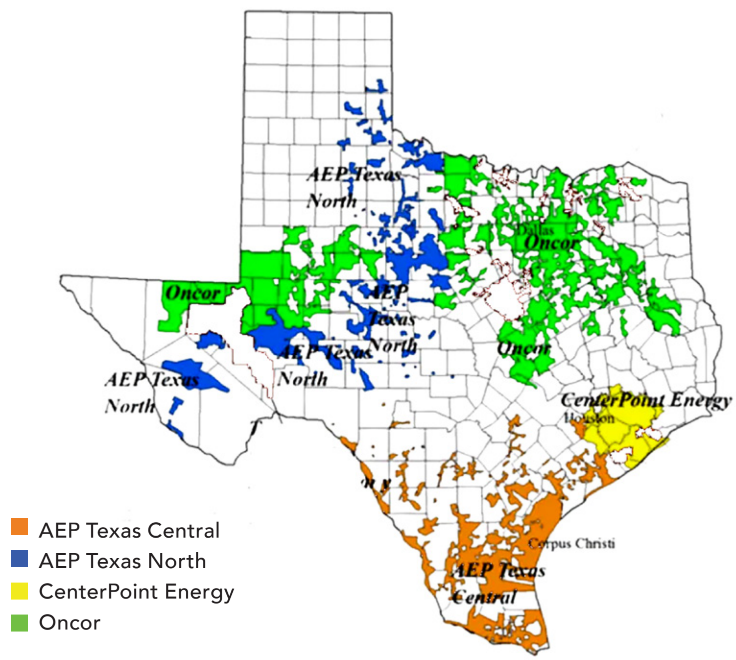
2.2 ERCOT's Competitive Wholesale and Retail Markets

The ERCOT region operates as a competitive wholesale electric market covering 90% of Texas. Parts of West and East Texas are not part of the ERCOT grid. ERCOT's 'competitive market' service area accounts for approximately 75% of ERCOT's load, while the remaining areas are served by municipally owned utilities or member-owned rural electric cooperatives, which are vertically integrated.

This paper focuses on ERCOT's competitive retail market, which is the area served by investor-owned electric utilities (Figure 6). REPs serve retail customers directly, buying power from generators through bilateral contracts and through ERCOT wholesale spot markets. Starting in 2001, customers in competitive retail areas could choose their electricity provider from numerous REPs with varying pricing and service options. The retail customer receives their electric bill directly from their REP, and the TDUs' charges are passed onto the customer through the REP.

While REPs determine their own rate offerings, transmission and distribution delivery services are geographic monopolies regulated by the PUCT.[19] The PUCT must approve rates for the TDUs serving customers in ERCOT. Four independent TDUs manage specific geographic areas within ERCOT, with three major investor-owned TDUs serving most ERCOT customers in the competitive market service areas: Oncor, CenterPoint, and AEP Texas[20, viii] This paper focuses specifically on the residential customers and rates within these three major TDUs.

Figure 6. Major Transmission & Distribution Utilities Territories in ERCOT Competitive Retail Areas (AEP, CNP & Oncor)[18, vii]



2.3 ERCOT's Retail Residential Electricity Price Components

Retail residential electricity prices in ERCOT reflect four main components: wholesale electricity cost plus REP markup, transmission, distribution, and other PUCT-regulated charges, such as storm or energy efficiency cost-recovery. Of these, transmission, distribution, and select other charges are set by the Public Utility Commission of Texas (PUCT); the REP passes these charges directly through to retail customers under PUCT rules and rates. The delivery (transmission and distribution) rates are uniform across all REPs within a service territory.

In contrast, the wholesale electricity cost component is competitively determined through the wholesale market, where REPs purchase power from generators. Wholesale prices fluctuate with demand, fuel

vii Texas-New Mexico Power Company (TNMP) service territory removed by author for clarity.

viii At the time of analysis, only TDUs with a resilience plan were considered.

costs, and generation availability. REPs design contracts for residential customers that reflect these market conditions, and include their administrative fees and profit margins.

Residential customers in the competitive areas can shop for electricity plans through the PUCT-sponsored Power to Choose website,[21] which lists dozens of retail offers from different REPs. Many REPs market their competing retail electricity plans directly to customers. In principle, the competitive process allows households to compare pricing, contract terms, and service options to find the best fit; however, awareness and accessibility to these options remain limited.

Some REPs offer a flat rate to absorb the risk of price fluctuations, while others charge higher rates during peak hours. Other REPs may offer exclusive delivery of clean energy or other features such as home batteries.[22]

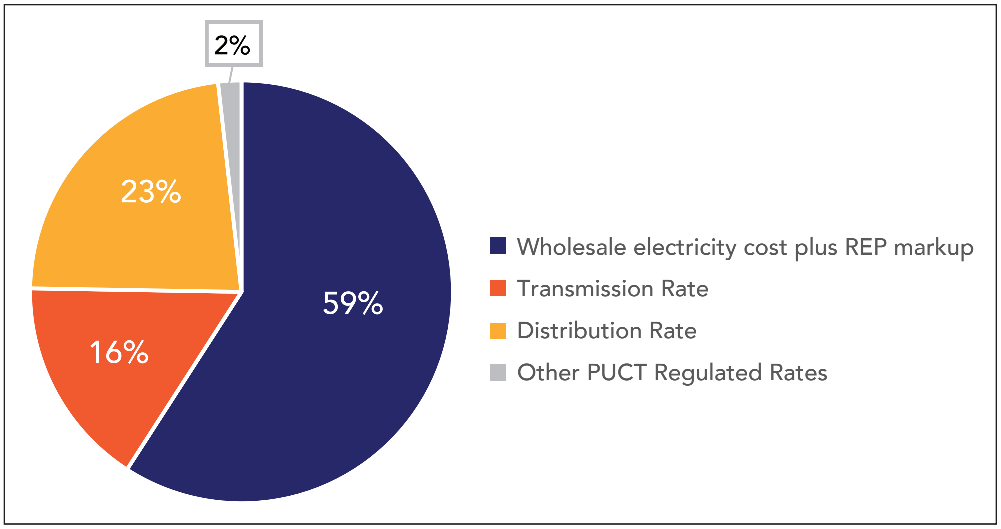
Retail prices include both regulated transmission and distribution charges, as well as the market-based electricity costs, which vary based on wholesale supply costs and REPs' pricing strategy and service offering. Table 2 presents these price components for the Oncor, CenterPoint, and AEP Texas service areas.

Table 2. Breakdown of ERCOT's Average Retail Residential Electricity Price (in cents per kWh) for the Oncor, CenterPoint, and AEP Texas Service Areas[23]

Price Component	Oncor (Dallas/Fort Worth) (¢/kWh)	CenterPoint (Houston) (¢/kWh)	AEP Texas (South/West Texas) (¢/kWh)
Wholesale electricity cost plus REP markup[ix]	9.11	9.02	9.06
Transmission Rate	2.36[24]	2.93[25]	2.14[26]
Distribution Rate	3.54[27]	3.12[28]	3.90[29]
Other PUCT Regulated Rates	0.13[30]	0.34[31]	0.35[32]
Total Retail Price (avg. 9/25/25)[x]	**15.15**	**15.40**	**15.44**

Since 2002, the transmission and distribution rate portion of residential bills has increased from 28% to 39%.[33]

Figure 7. Estimated Share of Electricity Prices by Component, as of September 2025



ix Includes REP markup for administrative fees and profit margin.

x See Establishing Baselines for Retail Residential Electricity Prices in Appendix B.

As illustrated in Figure 7, wholesale electricity costs (plus REP markup) account for the largest share of residential electricity prices (~59%), followed by distribution charges (~23%) and transmission charges (~16%), with other PUCT-regulated costs accounting for the remaining small share. These four elements account for nearly all charges on a typical residential bill, which will also include taxes and other government fees.

While ERCOT electric energy prices fluctuate with wholesale market conditions, the regulated delivery portion, especially distribution and transmission, has become a significant and rising driver of household bills, reflecting TDUs' ongoing investments in grid modernization, reliability, and system hardening. Since 2002, the transmission and distribution rate portion of residential bills has increased from 28% to 39%.[33]

Together, these supply and delivery dynamics shape the total cost of electricity for households, with wholesale supply prices determining the cost of producing electricity and regulated transmission and distribution charges determining how it reaches customers. The forecast in Section 4 will focus largely on these primary price components.

2.4 Generation Mix and Price Impacts

As illustrated in Table 1 (Section 2.1), a substantial share (38%) of ERCOT's generation comes from natural-gas-fired units, particularly during periods of high demand. Because fuel costs account for the bulk of most suppliers' marginal production costs, changes in natural gas prices directly and immediately affect wholesale electricity prices, particularly during high-demand hours.

The amount of generation and storage capacity available to meet demand also affects market prices. The operating reserve margin captures this balance between supply and peak demand: when operating reserves are high relative to demand, the risk of scarcity declines and prices tend to stabilize, but when reserves tighten, scarcity pricing can cause sharp increases. In this way, both plant-level fuel dynamics and system-level adequacy jointly shape ERCOT's market prices.

ERCOT's high level of wind and solar generation operate in many hours of the day and evening, producing high quantities of electricity priced near zero; these resources have significantly lowered the average price of electricity across the entire ERCOT market.

ERCOT's high level of wind and solar generation operate in many hours of the day and evening, producing high quantities of electricity priced near zero; these resources have significantly lowered the average price of electricity across the entire ERCOT market and reduced the number of hours when high air conditioning load (which occurs when solar generation is strong) drives potential operating reserve shortfalls. And the generous capacity of battery storage within ERCOT contributes to low-cost reliability services and further reduces the risk of scarcity events and costs.

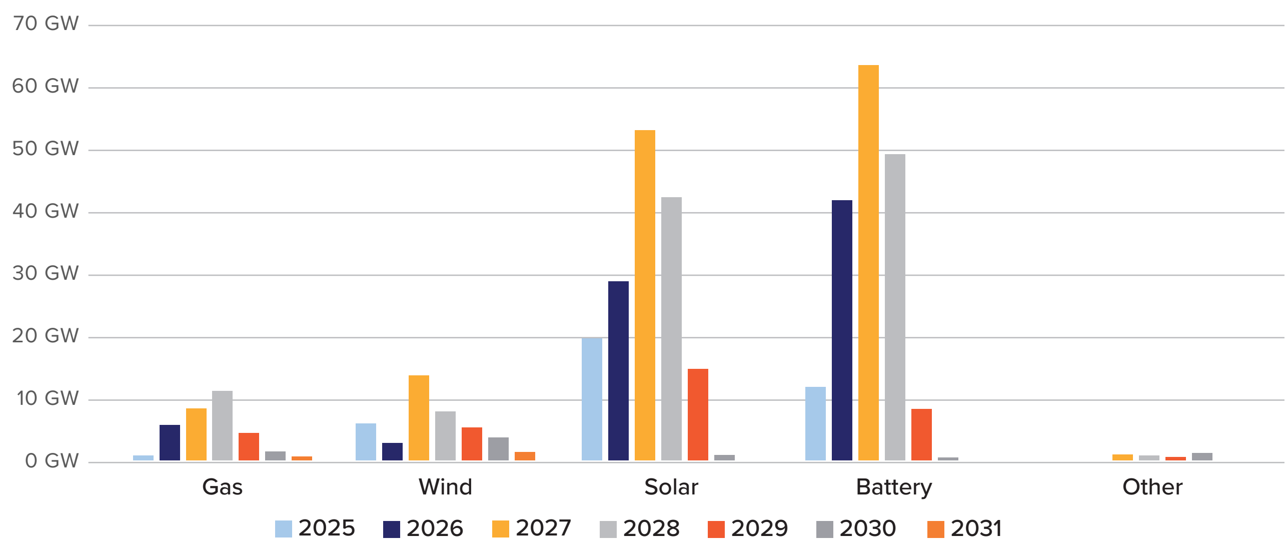
2.5 Interconnection Queues

ERCOT manages two interconnection queues that together illustrate the evolving dynamics of electricity supply and demand in Texas: one for generation resources seeking to connect to the grid, and another for major industrial or commercial customers seeking to interconnect directly to the transmission system that have high power demands, often referred to as large loads. High levels of activity in both the generator and large load queues underscore the rapid pace of energy development in Texas and the unprecedented scale of future system growth.

Generation Resources

ERCOT's Generation Interconnection Status Queue tracks proposed generation and storage projects seeking to connect to the system. As of May 31, 2025, ERCOT was tracking 2,031 active generation interconnection requests totaling 409,671 MW of proposed capacity.[34] This queue includes 158,490 MW (38.7%) of solar, 40,885 MW (10%) of wind, 173,997 MW (42.5%) of battery storage, and 32,490 MW (7.9%) of gas-fired generation. An additional 124 projects were classified as inactive, up slightly from 122 in April 2025.[35] Note that not all of the projects that get into the generator interconnection queue make it all the way through to construction and interconnection.

Figure 8. Interconnection Queue Capacity by Fuel Type, as of May 2025[36]



(Excludes capacity associated with projects designated as inactive per Planning Guide Section 5.2.5)

> ERCOT anticipates that data centers alone could add approximately 24 GW of new load by 2031, comparable to the combined demand of several mid-sized U.S. states.

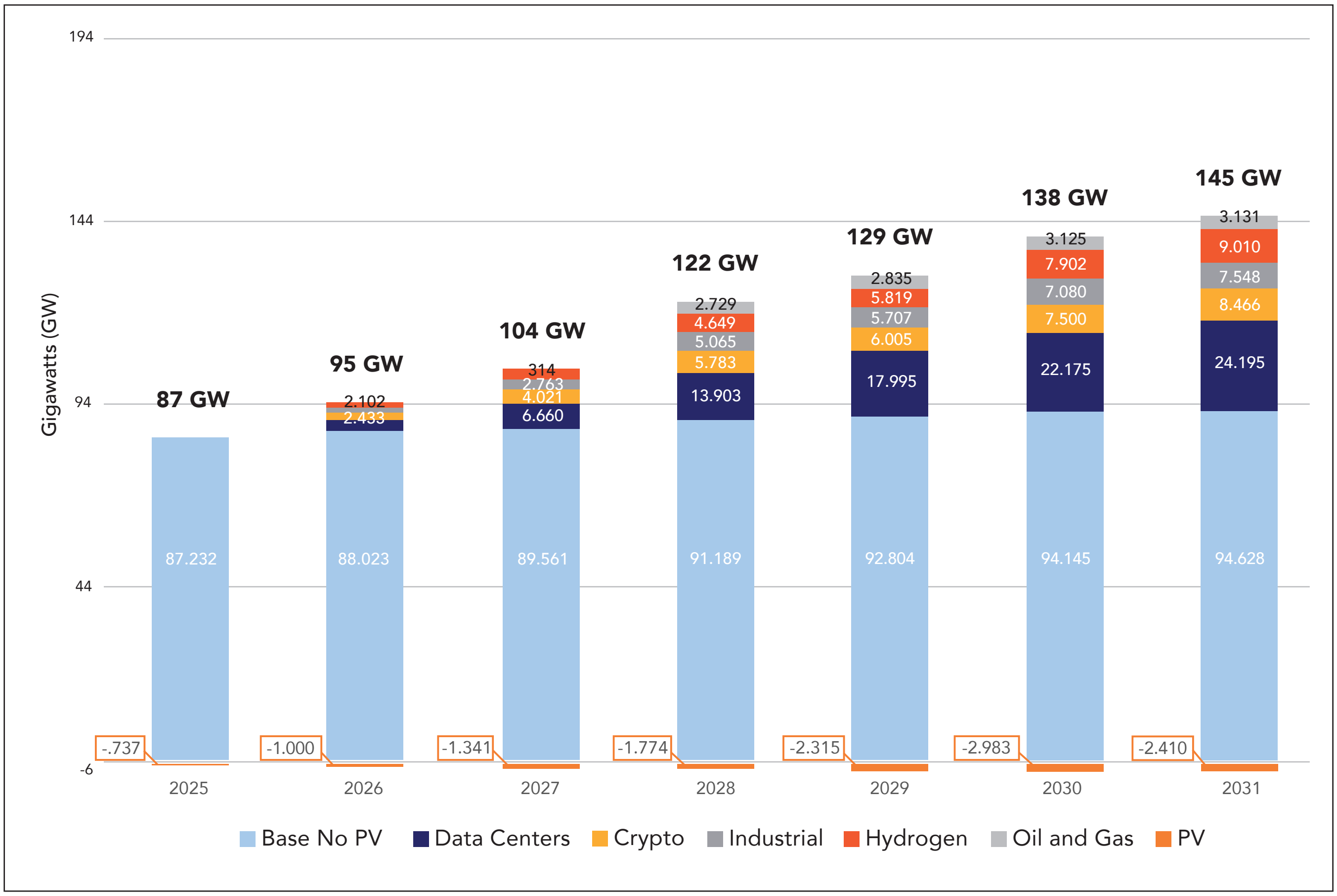
This pipeline of projects reflects the strongest period of renewable and storage development in ERCOT's history. Many of these projects are scheduled to come online before 2030, suggesting a robust near-term expansion of supply. ERCOT's "connect-and-manage" approach further accelerates the integration of new resources compared with other U.S. markets, supporting continued system reliability in the near term.

Large Load Interconnections

In addition to the new generation, ERCOT now tracks a rapidly growing queue of large-load interconnection requests from data centers, manufacturing facilities, and other high-demand operations seeking to connect directly to the transmission grid. ERCOT's 2025 Long-Term Load Forecast projects a sharp and sustained increase in large-load demand through 2031, driven primarily by data centers, crypto mining, industrial facilities, and emerging sectors such as hydrogen production. As illustrated in Figure 9, total system load is expected to rise from 87 GW in 2025 to 145 GW by 2031, representing a nearly 67% increase in peak demand over six years.[37] Within that growth, ERCOT anticipates that data centers alone could add approximately 24 GW of new load by 2031, comparable to the combined demand of several mid-sized U.S. states. Further growth stems from crypto mining, industrial expansion, hydrogen production, and oil and gas electrification. ERCOT notes that these large-load interconnections represent a transformative shift in system composition, with these nontraditional customers now comprising the bulk of incremental demand. As new customers connect to the grid, fixed system costs are shared across a larger base of ratepayers; however, how those fixed costs are allocated is currently under regulatory review (see Section 5.3 for details).[38]

House Bill 5066, passed by the Texas Legislature in 2023, revised the criteria for the PUCT to grant certificates of convenience and necessity for electric utilities, prioritizing the need for new transmission infrastructure to serve underserved areas and improve reliability. Transmission Service Providers and the PUCT must consider "unsigned load" (load seeking interconnection but without a signed agreement) in their forecasts and planning for transmission projects.[39] Recent forecasts show that including unsigned loads drastically lowers projected reserve margins, emphasizing the urgency of infrastructure investment.[40]

Figure 9. ERCOT Adjusted Load Forecast Breakdown by Type, as of May 2025[41,xi]



Even if only a fraction of these projects connect, the system will likely experience a historic increase in electricity consumption, reinforcing Texas's position as one of the fastest-growing load centers in the country. Favorable economic conditions, such as competitive power prices and available land, continue to attract these industries, creating both opportunity and uncertainty for future market stability.

xi ERCOT includes the projected reduction of load by PV as a negative value.

3. ERCOT PRICING, HISTORICAL TRENDS, AND AFFORDABILITY

Building on this understanding of ERCOT's market structure and price formation, the following analysis explores how these dynamics have affected household electricity costs and affordability over time. It traces historical price trends and their underlying drivers and evaluates current affordability for LMI households using measures such as energy burden, electricity burden, and affordability gaps. The analysis then situates ERCOT within a broader context by comparing pricing and affordability metrics in Texas with those in other states with similar climates.

Key Findings:

- Since 2021, residential electricity prices in ERCOT have risen about 30%, adding roughly $35–$40 per month to the average household bill.[xii]
- ERCOT's current average residential electricity rate (15.33 ¢/kWh) remains below the U.S. mean (17.47 ¢/kWh) but is rising faster than in peer states, eroding Texas's long-standing affordability advantage.
- The typical LMI household in Texas spends 6.7% of income on electricity, exceeding TEPRI's 5% affordability threshold and signaling growing energy insecurity.
- Intra-ERCOT regional disparities are pronounced: Oncor customers face the lowest average affordability gap ($304/year), while AEP Texas households face the highest ($709/year). AEP includes the highest relative percent of LMI households (44%), with the highest annual household electricity usage.
- In Texas's warm climate, roughly 80% of household energy spending goes toward electricity, as most homes rely on electric HVAC systems for both cooling and heating. This high dependence makes Texans' bills especially sensitive to rate increases and extreme weather, deepening affordability challenges for LMI households.

3.1 History of Electricity Prices in Texas

Over the last fifteen years, residential electricity prices in Texas have been relatively stable, with brief increases tied to fluctuations in fuel costs, seasonal demand, and market events. Since 2021, however, prices have consistently trended upward, both in Texas and nationwide. Figure 10 presents 15 years of average residential electricity rates for all REPs, beginning in 2010, and the averages for REPs in ERCOT's three main TDUs beginning in 2021. (Methods are summarized in Appendix A.)[42,xiii]

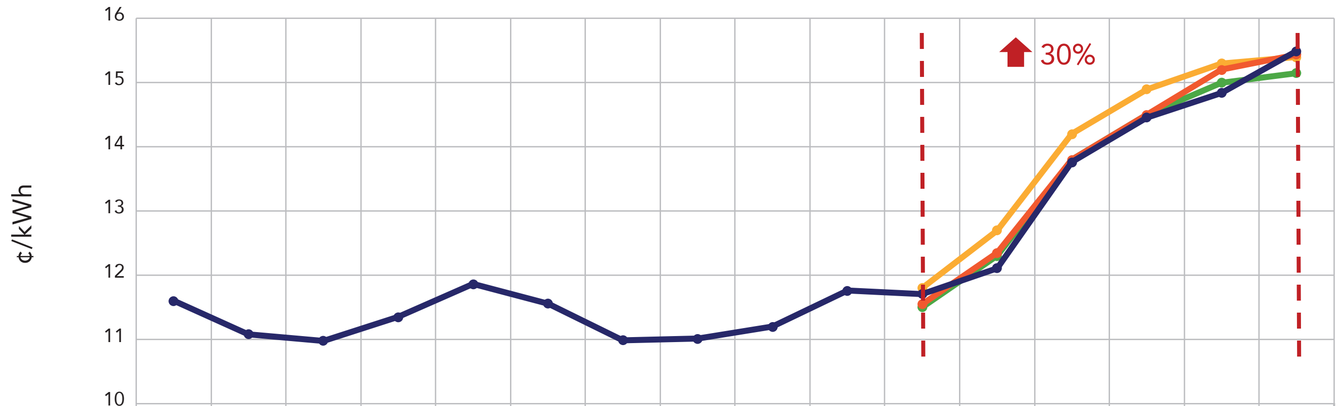
Figure 10 shows a clear five-year climb, with average residential prices across all three ERCOT TDUs up approximately 30% since 2021. For a household using approximately 1,000 kWh per month, this increase represents an estimated higher cost of $35–$40 per month, or roughly $450 a year. By 2025, prices average approximately 15.33 ¢/kWh across all three territories, indicating that system-wide factors, rather than local conditions, are driving the trend. These increases reflect the combined impact of rising natural-gas prices, storm-related cost recovery, grid-hardening investments, and regulatory pass-throughs.[43] Although Texas prices remain competitive nationally, these year-over-year increases are challenging for households already facing high energy burdens.

xii In nominal dollars.

xiii Methodology based on 1,000 kWh usage benchmark; Graham Lumley, "Historical TDU Delivery Charges in Texas (Oncor, CenterPoint, AEP Texas)," BKV Energy

Additionally, it is utility investments that are driving up a disproportionate share of the costs borne by households. Looking only at the CenterPoint service territory for 2023, residential consumers used 33% of the electricity but were allocated 49% of the transmission costs.[44]

Figure 10. Texas Average Residential Electricity Price, 2010–2025 (¢/kWh)



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
CenterPoint											11.8	12.7	14.2	14.9	15.3	15.4
Oncor											11.5	12.3	13.8	14.5	15	15.15
AEP S&NW											11.55	12.35	13.8	14.5	15.2	15.44
AVG. All Service Providers in Texas	11.60	11.08	10.98	11.35	11.86	11.56	10.99	11.01	11.20	11.76	11.71	12.11	13.76	14.46	14.84	15.49

3.2. Current Electricity Prices within ERCOT

The average residential price in the ERCOT Competitive Retail Market is 15.33¢/kWh. Residential electricity prices remain relatively consistent across the TDUs. For the purposes of this paper, "ERCOT Competitive Retail Market" references data for the three focus TDUs (Oncor, CenterPoint, AEP Texas), who collectively serve **2.5 million LMI households**.

Table 3. ERCOT Average Residential Electricity Prices for Residential Customers as of September 2025[45]

	Oncor (Dallas/Fort Worth)	CenterPoint (Houston)	AEP Texas (South/West Texas)	Texas Competitive Market (Average)
Average Retail Electricity Price in ¢/kWh	15.15	15.40	15.44	**15.33**

As described, these retail prices include both regulated transmission and distribution charges and market-based wholesale electricity costs, which vary from REP to REP. The uniformity across service territories suggests that income levels and usage patterns, rather than wide price differences, drive most of the affordability challenges for ERCOT's low-income households.[46,xiv]

xiv Delivery (TDU) or "transmission and distribution" charges comprise approximately 30–40% of typical electricity bills.

3.3 Current Electricity Affordability for LMI Residential Households in the ERCOT Competitive Retail Market

Although electricity prices remain relatively consistent across the ERCOT Competitive Retail Market, the burden of rising costs falls disproportionately on LMI households. LMI households are defined as those earning at or below 80% of the Area Median Income (AMI). AMI is a benchmark published annually by the U.S. Department of Housing and Urban Development (HUD) that represents the median income level for households in a given geographic area, adjusted for household size.[47] Using AMI provides a consistent framework for comparing affordability across regions by accounting for local differences in income and the cost of living. In Texas, approximately 41% of all households can be classified as LMI.[48] This fact highlights that affordability challenges extend well beyond isolated low-income pockets and affect a significant portion of the state's population.

LMI customers may be limited in their ability to realize the full benefit of the retail choice model. While in principle, the competitive process allows households to compare pricing, contract terms, and service options, awareness and accessibility to these options remain limited: many customers are unfamiliar with Power to Choose, may encounter difficulties navigating the online platform, or may lack sufficient information and expertise to meaningfully compare REP offerings. Many LMI customers are renters whose landlords may select their REP without customer input.[49] Additionally, LMI households tend to occupy older, less energy-efficient homes that require more energy to cool and heat, magnifying the impact of each rate increase.[50]

> LMI households tend to occupy older, less energy-efficient homes that require more energy to cool and heat, magnifying the impact of each rate increase.[48]

Understanding how affordability is measured is essential to evaluating these challenges. Energy affordability describes the relationship between household energy costs and the ability to pay. Analysts use several metrics to assess this relationship and identify when costs become unsustainable. Three measures are central to this analysis: Energy Burden, Electricity Burden, and the Electricity Affordability Gap.

- ***Energy Burden:*** measures the share of income spent on all household energy needs, including electricity and natural gas (or other heating source). Nationally, the average *Energy Burden* across all income levels is 3–4%. Households are considered highly burdened if *Energy Burden* exceeds 6% and in energy poverty if energy burden exceeds 10%.[51,xv]
- ***Electricity Burden:*** narrows the focus to electricity costs alone and measures the share of income spent on household electricity. Because the fuel mix and percentage of energy costs dedicated to electricity vary by region, there is no universally accepted benchmark for *Electricity Burden*.

However, in regions like Texas, where electricity is the dominant or only household energy source, *Electricity Burden* provides a clear indicator of affordability challenges.

Household energy use in Texas differs from that in colder states. In warm-climate states like Texas, a majority (60%) of households rely on electric HVAC systems for both cooling and heating.[52] Low-income households in Texas spend roughly 6% of their income on electricity and about 1% on natural gas.[53] As shown in Table 4 (Electricity share of household costs for LMI Households), electricity accounts

xv "Energy burden is defined as the percentage of gross household income spent on energy costs; a household with 6% or greater energy burden is considered to be a high energy burden household."

for the overwhelming majority of household energy spending across ERCOT's major service territories, ranging from 75% to more than 90% of total combined energy costs. In contrast, households in colder states such as Illinois spend a higher share on gas for heating, averaging about 3% on natural gas and 4% on electricity, for a total energy burden near 7%.

Because electricity is the dominant household energy expense in Texas, TEPRI applies a 5% affordability threshold for the electricity burden in ERCOT. This threshold reflects both the state's warm climate and the electric-heavy fuel mix typical of Texas homes (see Appendix B, Part II, step 5).

In Texas, electricity is the dominant or only household energy source, making Texans' bills especially sensitive to electricity rate increases.

- *Electricity Affordability Gap (EAG)* quantifies the annual dollar amount by which a household's electricity costs exceed 5% of a household's income. This measure captures the portion of the bill that realistically exceeds the means of low-income households. EAG can be expressed as a dollar value or a percentage of the bill that is unaffordable. For example, an EAG of $200/yr indicates that, on average, the household's electricity expenses are $200 above what a household can reasonably afford given its income level.

LMI households spend 6.7% of their income on electricity, exceeding TEPRI's 5% threshold. This gap translates to roughly $420 per household each year.

ERCOT LMI Household Affordability

Table 4 compares electricity burden and affordability gaps for LMI households across ERCOT's three largest service territories, illustrating how affordability pressures vary across the region.

On average, LMI households spend 6.7% of their income on electricity, exceeding TEPRI's 5% threshold. This gap translates to roughly $420 per household each year, or 25% of the average bill for households in the ERCOT Competitive Retail Market, which exceeds their ability to pay.

Table 4. Summary of LMI Household Electricity Cost Affordability Characteristics, Based on 2025 Electricity Costs for ERCOT's Oncor, CenterPoint, AEP Texas, and ERCOT Competitive Retail Market[54]

	Oncor	**CenterPoint**	**AEP Texas**	**ERCOT Competitive Retail Market** (combined)
Total Number of Low-to-Moderate Income Residential Customer Households	1,143,491	895,351	476,504	**2,515,346**
Percentage of LMI Households (% by territory)	39%	40%	44%	**41%**
Average Annual Electricity Usage for LMI households (kWh)	10,743	10,936	11,229	**10,904**
Average Annual Electricity Costs for LMI households ($)	$1,628	$1,684	$1,734	**$1,668**
Average Electricity Burden for LMI households (% of income)	6.2%	6.6%	7.5%	**6.7%**
Electricity Share of Energy Bill for LMI Households	75%	91.4%	73.6%	**80%**
Average Annual Electricity Affordability Gap (EAG) for LMI households ($)	$304	$413	$709	**$420**
Average Annual Electricity Affordability Gap as % of the total Electricity Cost for LMI households	19%	25%	41%	**25%**
Range of Annual Electricity Affordability Gap for LMI households ($) for 80% – 30% AMI	$237–$2,167	$257–$1,109	$262–$1,228	**$249–$1,612**

Affordability challenges vary by region. Households in Oncor's service territory face the lowest average burden at 6.2%, with an affordability gap of $304, or about 19% of the annual bill, considered unaffordable. In the CenterPoint service area, the gap rises to $413, equal to 25% of the bill. Households served by AEP Texas experience the most severe strain, with an electricity burden of 7.5% and nearly $709, or 41% of the annual bill, classified as unaffordable.

The range of affordability gaps across the ERCOT Competitive Retail Market is also striking. While some households fall just $249 short of affordable annual bills, others face gaps as high as $1,612. These findings highlight not only the average pressures facing LMI households but also the wide disparities in affordability outcomes across ERCOT. Most of this disparity reflects income differences: households earning closer to 30% of AMI experience significantly larger affordability gaps than those at 80% of AMI, underscoring that the lowest-income Texans bear the heaviest burden.

3.4. Comparison of Residential Electricity Prices and Burdens with States of Similar Climate

Comparing electricity prices and affordability across states provides important context for understanding where ERCOT and Texas stand relative to their peers. This section compares electricity prices and affordability in ERCOT and Texas overall with other states that share similar climates and demographics (Table 5). While our analysis focuses on the competitive areas served by Oncor, CenterPoint, and AEP Texas, statewide data also includes other IOUs within and outside of ERCOT, municipal utilities, and electric cooperatives.

Table 5. Residential Electricity Rate Comparison among States with Similar Climate in ¢/kWh[55]

States	¢/kWh
Alabama	16.09
Arizona	15.76
Texas (All providers)	**15.49**
ERCOT Competitive Retail Market	**15.33**
New Mexico	14.59
Louisiana	13.15
Arkansas	13.15
Oklahoma	12.94
U.S. Average	**17.47**

Regional Electricity Rates

At 15.33¢/kWh, ERCOT sits in the middle of the pack. However, households across Texas still face higher affordability burdens than many of their regional peers.

While average Texas residential rates (for all households) remain below the U.S. average, Table 6 shows that rates are increasing at a faster pace (29% over 5 years) than in some peer states. This relative affordability advantage could erode if these trends continue.

While average residential rates (for all households) in Texas remain below the U.S.average, they are increasing at a faster pace.

Table 6. Four-Year Residential Price Growth (2020–2024)—Texas vs. Selected States vs. U.S Average[56]

State	2020 (¢/kWh)	2024* (¢/kWh)	4-yr change
Texas (All Providers)	11.7	15.1	**29%**
U.S Average	13.15	16.48	**25%**
Arizona	12.27	15	**22%**
Louisiana	9.67	11.7	**21%**
Oklahoma	10.1	12.2	**21%**
Alabama	12.6	15.2	**21%**
Arkansas	10.4	12.3	**18%**

Regional Electricity Burdens

As shown in Table 7, although Texas electricity rates are comparable to those in neighboring states, electricity burdens for both Texas statewide (7.4%) and the ERCOT Competitive Retail Market (6.7%) are higher than those in most neighboring states.

Table 7. Average Residential Electricity Burden Comparison among States with Similar Climate in % for LMI Households[57]

States	Electricity Burden
Louisiana	7.4%
Texas	**7.4%**
Alabama	7.2%
ERCOT Competitive Retail Market	**6.7%**
Arkansas	5.8%
Oklahoma	5.7%
Arizona	4.7%
New Mexico	4.0%

Compared to households in other regions of the U.S., households in these peer states rely heavily on electricity for year-round cooling and heating, raising their electricity consumption above the national average.

These results demonstrate that while retail electricity rates in ERCOT remain competitive to other states, low-income Texans face a disproportionate affordability challenge, which may be explained by our relatively high bills and high trending price increases over time.[58]

4. TEPRI ELECTRICITY PRICE AND AFFORDABILITY FORECAST 2025 THROUGH 2030

Looking ahead to 2030, electricity affordability in ERCOT is poised to come under increasing strain. Rising demand, coupled with ongoing investments in transmission and distribution, will continue to shape electricity costs for households across Texas. To anticipate these pressures, our analysis models future residential electricity prices under assumptions about generation costs, infrastructure spending, and usage growth. The forecast shows how rates are expected to change across ERCOT, and what those changes mean for electricity burden and affordability gaps among LMI households. Together, the results illustrate the scale of affordability challenges ERCOT customers are likely to face if no major mitigation measures are adopted.

Electricity affordability is poised to come under increasing strain from rising demand coupled with ongoing investments in transmission and distribution.

Key Findings:

- Residential electricity rates are projected to increase by nearly 29% by 2030, rising from 15.3¢ to 19.8¢/kWh across the ERCOT Competitive Retail Market.
- The average LMI household's electricity burden is expected to climb from 6.7% to 8.2%, effectively doubling the average affordability gap from $420 to $863 per year.
- Affordability stress will be most acute in AEP Texas, where nearly half of annual bills could exceed the affordability threshold by 2030.
- The increase in transmission and distribution charges is primarily driven by large-scale investments to expand grid capacity, "harden" the grid for resilience, and accommodate both rising load growth and the generation projects currently in ERCOT's interconnection queue.

4.1 TEPRI Projection Model

Overview of Model Framework

TEPRI used a two-part projection model to forecast residential electricity price and affordability outcomes for LMI households across ERCOT through 2030. In Part I, prices were forecast from 2025 to 2030 by integrating data on three major cost components—wholesale electricity costs (plus REP markup), transmission, and distribution. In Part II, electricity affordability was forecasted, based on outputs from step one and inputs related to household income growth. These inputs are combined to calculate annual household electricity costs, electricity burden, and affordability gap indicators for each TDU and ERCOT overall.

Residential electricity rates are projected to increase by nearly 29% by 2030, effectively doubling the affordability gap for LMI households.

The following steps were used to forecast retail residential electricity prices and affordability from 2025 to 2030. The detailed methodology, underlying assumptions, and data sources are described in Appendix B.

Part I. Retail Residential Electricity Price Forecast

Step 1. Establish 2025 Baselines for Retail Residential Electricity Prices based on advertised plans by REPs on Power to Choose website,[59] for each study area TDU.

Step 2. Forecast Electricity Usage for the Residential Sector in Each TDU. Residential load growth was modeled at +2 percent per year for Oncor and +1 percent per year for CenterPoint and AEP Texas.[xvi]

Step 3. Forecast Price Components. Each rate component was projected independently and then combined to determine the total retail residential rate (¢/kWh).

a. Wholesale Electricity Costs, Plus REP Markup. Wholesale electricity costs were modeled by applying generation rates forecasted in the U.S. Energy Information Administration's *Annual Energy Outlook 2025* to baseline retail residential electricity rates in Step 1. Year-by-year changes presented in Table 8 can be explained by current generation capacity, capacity in the interconnection queue, and expiration of the federal clean energy tax credits, among other factors (see Appendix B).

Table 8. Projected Generation Rates in Texas, 2024–2030[60, xvii]

	2024	2025	2026	2027	2028	2029	2030
Gen ¢/kWh	6.399	6.028	5.635	5.076	5.103	5.603	5.895
Year by year change		-6%	-7%	-10%	1%	10%	5%

b. Transmission & Distribution Rates. Transmission and distribution rate projections follow the cost-of-service framework used by the PUCT. Planned transmission and distribution investments by the individual TDUs and ERCOT (Table 9) were converted to the annualized cost of services, allocated to the residential rate class, and divided by projected annual consumption for that class.

Table 9. Planned Transmission and Distribution Investment (2025-2030)

Source	Planned Investment
ERCOT's Regional Transmission Plan (2024 RTP)[61]	**$38 B** of systemwide upgrades; includes $15 billion for STEP 765-kV to Permian Basin
Oncor, *Quarterly Results & Capital Plan*[62]	Approximately **$36 B** to expand transmission and distribution 2025-2030
CenterPoint Investment[63]	Approximately **$21 B** through 2030
AEP Texas, *System Resiliency Plan*[64]	Approximately **$ 940 M** over 3 years, representing ≈ 8 percent annual increase in distribution charges

c. Other PUCT-Regulated Charges. Components such as the Energy Efficiency Cost Recovery Factor, Storm Cost Recovery Factor (for CenterPoint and AEP Texas), and Temporary Emergency Electric Energy Facilities surcharge are expected to remain stable through 2030 and were held constant in the model.

xvi See Appendix B. Part I, Step 2, and Part II, Step 2.
xvii Generation rates are expressed in nominal ¢/kWh.

Part II. Forecast Electricity Affordability

Step 1. Establish Baseline Data for Household Electricity Use and Burdens, including household electricity usage (kWh), annual electricity cost ($), energy and electricity burden (% of income), and number of LMI households in the study TDUs.

Step 2. Project Household Electricity Usage and Bills. Apply annual load growth assumptions from Part I, Step 2, to project household electricity consumption (kWh/household/yr), then multiply household usage values by forecasted retail rates from Part I to estimate annual electricity bills per household ($).

Step 3. Establish Annual Income Values. Household income baselines ($) derived from Area Median Income (AMI) estimates at the census tract level within each TDU service territory were assumed to increase 2% annually ($).

Step 4. Calculate Electricity Burden. Electricity burden (%) measures the share of household income devoted to electricity expenses.

Step 5. Establish Electricity Burden Threshold and Calculate Electricity Affordability Gaps (EAG). TEPRI defines electricity as affordable when total annual costs do not exceed 5% of household income (see Appendix B. The affordability gap quantifies the extent to which a household's bill exceeds the 5% affordability threshold, both in dollars ($) and as a share (%) of the total bill.

Step 6. Aggregate Across ERCOT. Affordability results for Oncor, CenterPoint, and AEP Texas were aggregated into ERCOT-wide averages using weighted LMI household counts for each TDU service area.

Key Drivers and Assumptions

The projection draws on ERCOT system data, TDU investment plans, and national energy forecasts, focusing on the three major service territories in the ERCOT Competitive Retail Market: Oncor, CenterPoint, and AEP Texas. Together, these TDUs account for the largest share of ERCOT's residential load and serve as the basis for the affordability analysis. The model incorporates technical, financial, and policy factors that influence residential prices and affordability between 2025 and 2030. Appendix B presents the detailed methodology, underlying assumptions, and data sources.

The dominant cost drivers are transmission and distribution investments, which comprise 39% of the average retail residential electricity price. As summarized in Table 9 and Appendix B, substantial transmission and distribution investments are planned over the next five years by ERCOT and the TDUs. At the same time, renewable project development in ERCOT is at an all-time high, with more than 350 GW of solar, wind, and battery projects currently in the interconnection queue, and this growth is expected to continue through at least 2028.[65]

4.2 TEPRI Electricity Price Forecast 2025–2030

Based on the assumptions and steps outlined above, residential electricity prices across the ERCOT Competitive Retail Market are expected to rise by 29% from 2025 to 2030. These projections are likely conservative because the analysis does not account for potential additional cost drivers such as extreme weather events, tariff adjustments, or the phase-out of renewable generation subsidies.

Figure 11. Five-Year Forecasted Electricity Price in ERCOT

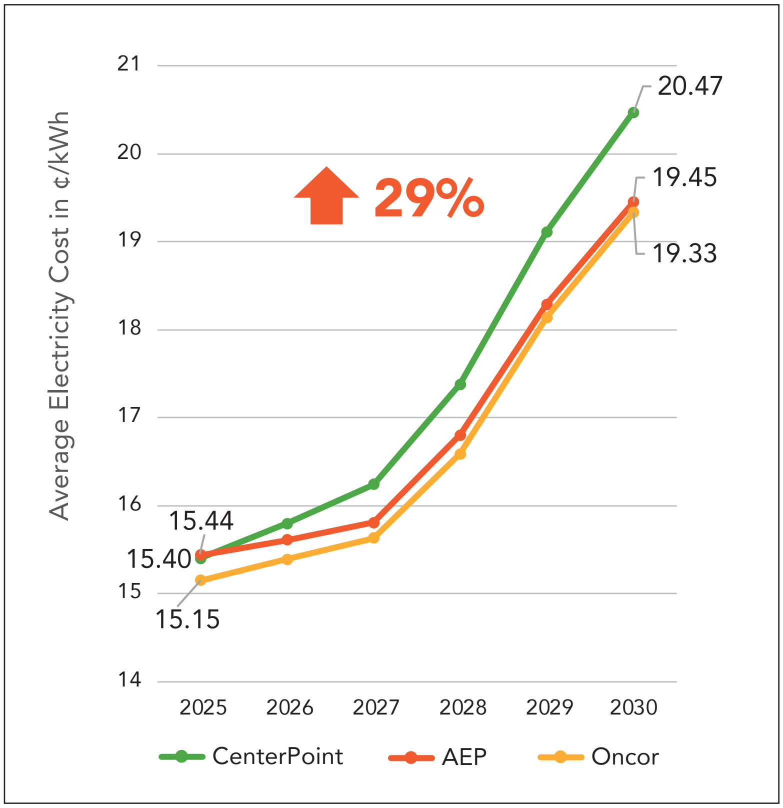


Table 10. Forecasted Residential Electricity Price for the Years 2026 through 2030 for Oncor, CenterPoint, and AEP Texas Service Areas

	2025 (Actual)	2026	2027	2028	2029	2030
Oncor	15.15	15.39	15.63	16.59	18.14	19.33
CenterPoint	15.40	15.80	16.24	17.38	19.11	20.47
AEP Texas	15.44	15.61	15.81	16.80	18.29	19.45
ERCOT Competitive Retail Market (avg.)	**15.33**	**15.60**	**15.89**	**16.92**	**18.51**	**19.75**
Year to Year % Change		**3%**	**4%**	**7%**	**9%**	**7%**
Total Change						**29%**

From 2025 to 2030, ERCOT's competitive markets' residential electricity rates are projected to rise from 15.33¢/kWh to 19.75¢/kWh, representing a 29% increase overall. Residential rates are expected to increase modestly in 2026–2027 (3–4% annually), then accelerate from 2028–2030 (7–9% annually) (Table 10).

This reflects Energy Information Administration generation rate price projections, which show a near-term decline through 2027, followed by increases from 2028 onward. These shifts, combined with large capital recovery requirements for transmission and distribution, drive the step-up in retail rates beginning in 2028.

Wholesale electricity costs are projected to decline modestly between 2025 and 2027, largely due to adequate existing and recent resource additions, new dispatchable generation coming online, and the near-term effects of the Real-Time Co-Optimization market reform improving operational efficiency. ERCOT's installed resource capacity, about 180 GW in 2025, is sufficient to meet projected peak demand through at least 2027. In addition, approximately 409 GW of resources are currently seeking interconnection, including a large share of solar and storage projects. As these resources connect to the grid, the additional supply is expected to temporarily ease wholesale prices and maintain relatively stable wholesale electricity costs.

After 2028, however, wholesale electricity costs are projected to rise. This rebound is driven by several converging factors: the expiration of federal clean-energy tax credits, tightening reserve margins as load growth outpaces new capacity additions, and seasonal fuel-price volatility affecting natural gas–fired generation. These dynamics are expected to raise wholesale electricity costs by as much as ten percent annually through 2030 and beyond.

Transmission and distribution (T&D) costs will be significant long-term drivers of rate increases. ERCOT's 2024 Regional Transmission Plan identifies roughly $38 billion in transmission expansion through 2030, including $15 billion for the new 765-kV Strategic Transmission Expansion Plan (STEP) that will support record load growth in the Permian Basin and West Texas. Similarly, distribution utilities plan substantial capital investments in part due to legislatively required "resiliency plan" mandates after Winter Storm Uri: Oncor's $36 billion five-year plan, CenterPoint's $21 billion investment through 2030, and AEP Texas has likewise committed approximately $940 million over three years toward its own grid resilience and modernization initiatives under the same statewide resiliency framework.

This study identified an estimated $96B in planned transmission and distribution investments through 2030.

New T&D spending will increase residential electric bills for every customer in a TDU's service territory.

Under the PUCT cost-of-service framework, these planned investments are converted into annualized costs that include a regulated return, operating and maintenance expenses, depreciation, and taxes. The residential share of those costs is then allocated across total household consumption and recovered through delivery charges on customer bills. As a result, new T&D spending will increase residential electric bills for every customer in a TDU's service territory. These infrastructure investments represent the single largest long-term contributor to residential electricity price growth.

4.3 TEPRI Electricity Affordability Forecast 2025–2030

Households with low-to-moderate incomes are expected to face the greatest challenges as electricity bills continue to rise. TEPRI research shows that nearly half of LMI households already struggle to pay their energy bills each month, indicating limited capacity to absorb future increases. The following table summarizes the forecasted Electricity Burden and Electricity Affordability Gap, expressed in both dollars and percentages, for 2026 through 2030, based on projected increases in ERCOT's residential electricity rates and moderate increases (1-2%) in household electricity consumption.xviii The Electricity Burden reflects the percentage of total household income that goes to the electricity bill, and the Affordability Gap percentage reflects the percentage of the electricity bill that is unaffordable.

Table 11. Projected Residential LMI Household Electricity Cost Affordability for Oncor, CenterPoint, and AEP Texas for 2026 Through 2030

	2025	2026	2027	2028	2029	2030
Oncor						
Average Electricity Burden	6.2%	6.2%	6.3%	6.6%	7.1%	7.4%
Average Annual Electricity Affordability Gap for LMI households in $	$304	$336	$370	$450	$596	$699
Average Annual Electricity Affordability Gap in % of the total Electricity Cost	19%	20%	21%	24%	29%	32%
CenterPoint						
Average Electricity Burden	6.6%	6.7%	6.8%	7.3%	7.9%	8.4%
Average Annual Electricity Affordability Gap for LMI households in $	$413	$448	$489	$610	$799	$949
Average Annual Electricity Affordability Gap in % of the total Electricity Cost	25%	26%	27%	31%	37%	40%
AEP Texas						
Average Electricity Burden	7.51%	7.51%	7.63%	7.99%	8.60%	8.96%
Average Annual Electricity Affordability Gap for LMI households in $	$709	$725	$745	$837	$985	$1,097
Average Annual Electricity Affordability Gap in % of the total Electricity Cost	41%	41%	41%	43%	47%	48%
ERCOT Competitive Retail Market (Combined)						
Average Electricity Burden	6.7%	6.8%	6.9%	7.3%	7.8%	8.2%
Average Annual Electricity Affordability Gap for LMI households in $	$420	$450	$483	$580	$742	$863
Average Annual Electricity Affordability Gap in % of the total Electricity Cost	25%	26%	27%	30%	35%	38%

For the entire service area covering Oncor, CenterPoint, and AEP Texas, the indicators presented in Figures 12-16, increase substantially in 2030 when compared to those in 2025.

xviii See Appendix B. Part I, Step 2, and Part II, Step 2.

Figure 12. Forecasted Electricity Burden for LMI Households in ERCOT (2025–2030)

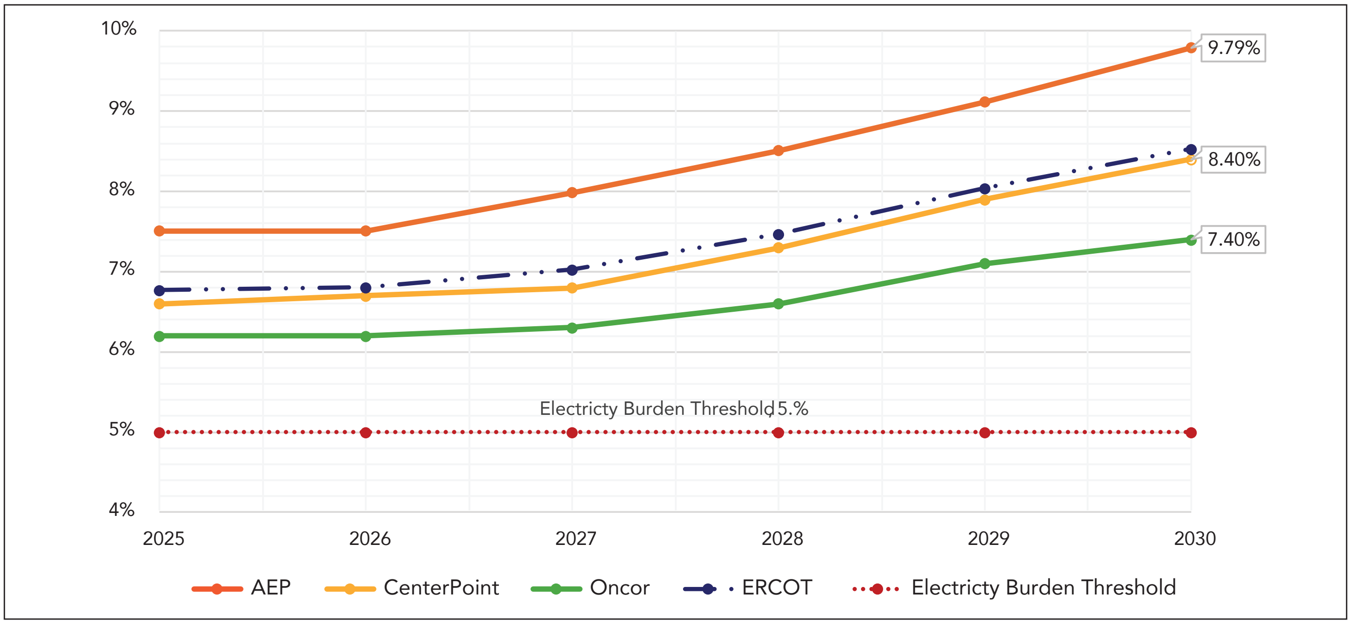
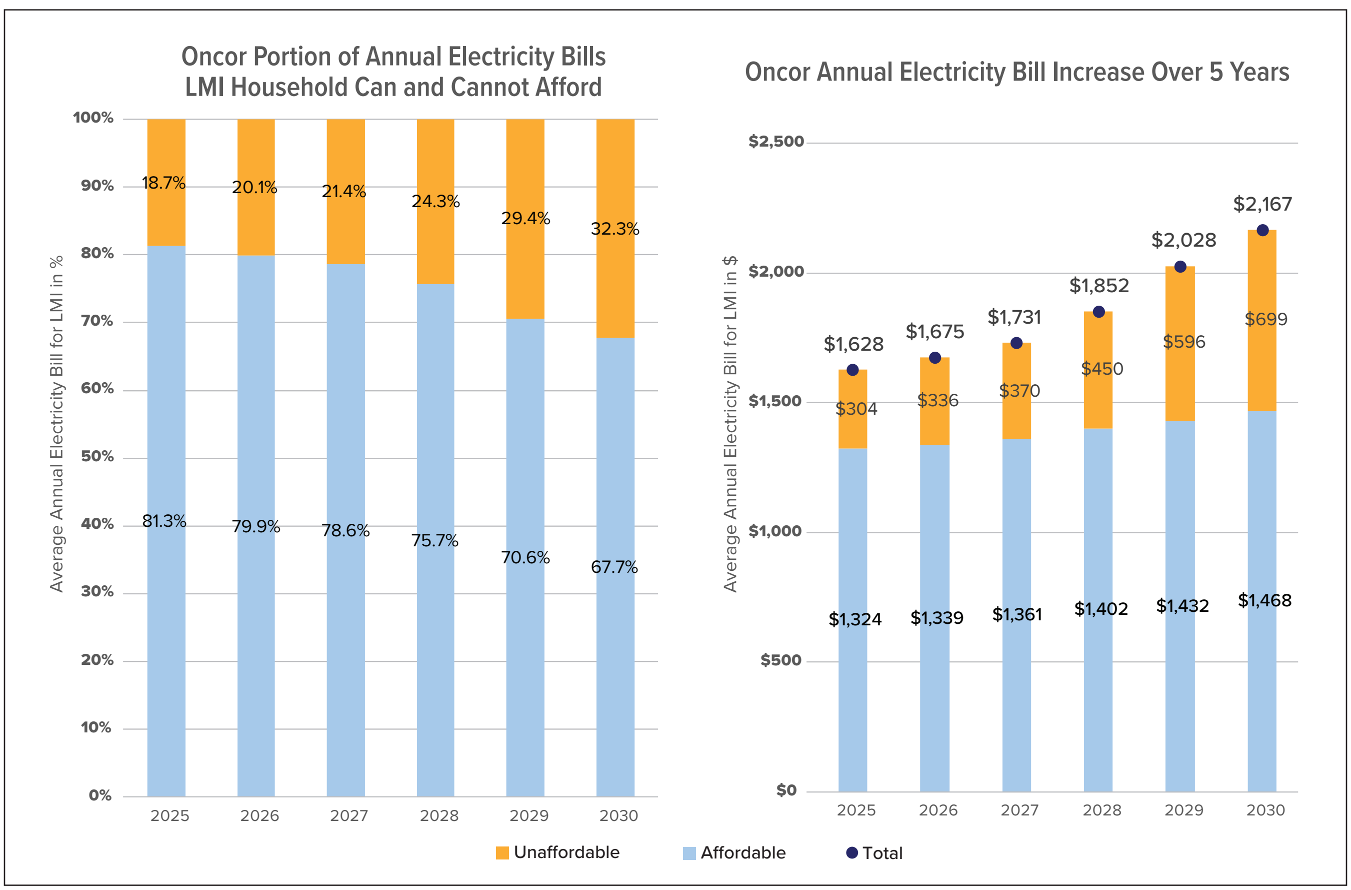


Table 11 forecasts the Electricity Affordability Gap in the U.S $ ERCOT Competitive Retail Market to increase from $420 (2025) to $863 (2030). Figures 13-16 quantify the electricity affordability gap for each of the TDUs included in the analysis below.

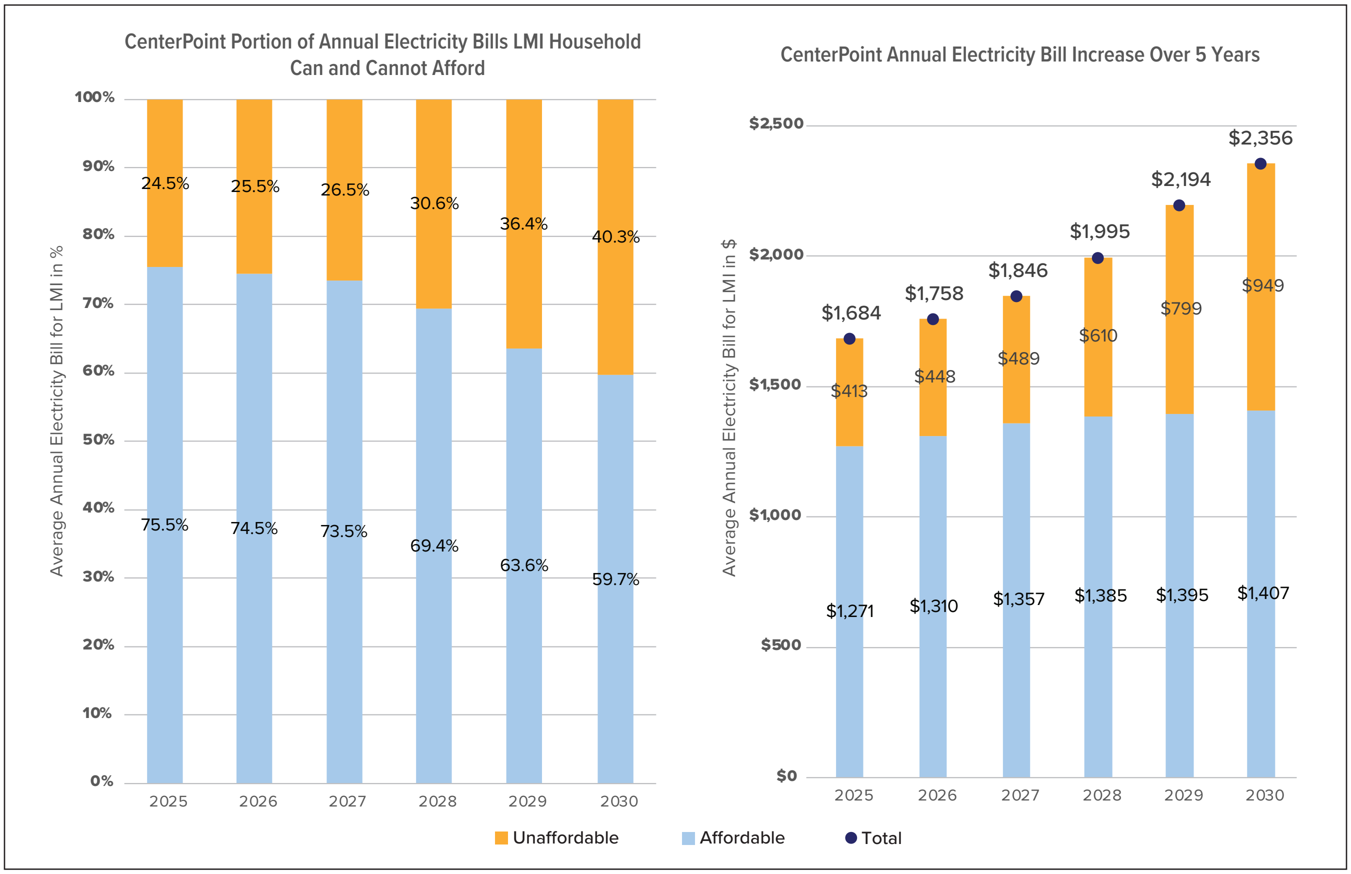
Oncor LMI Electric Bill Increases

Figure 13. Oncor: Projected Bill Increase and Affordability Gap in Percent and Dollars



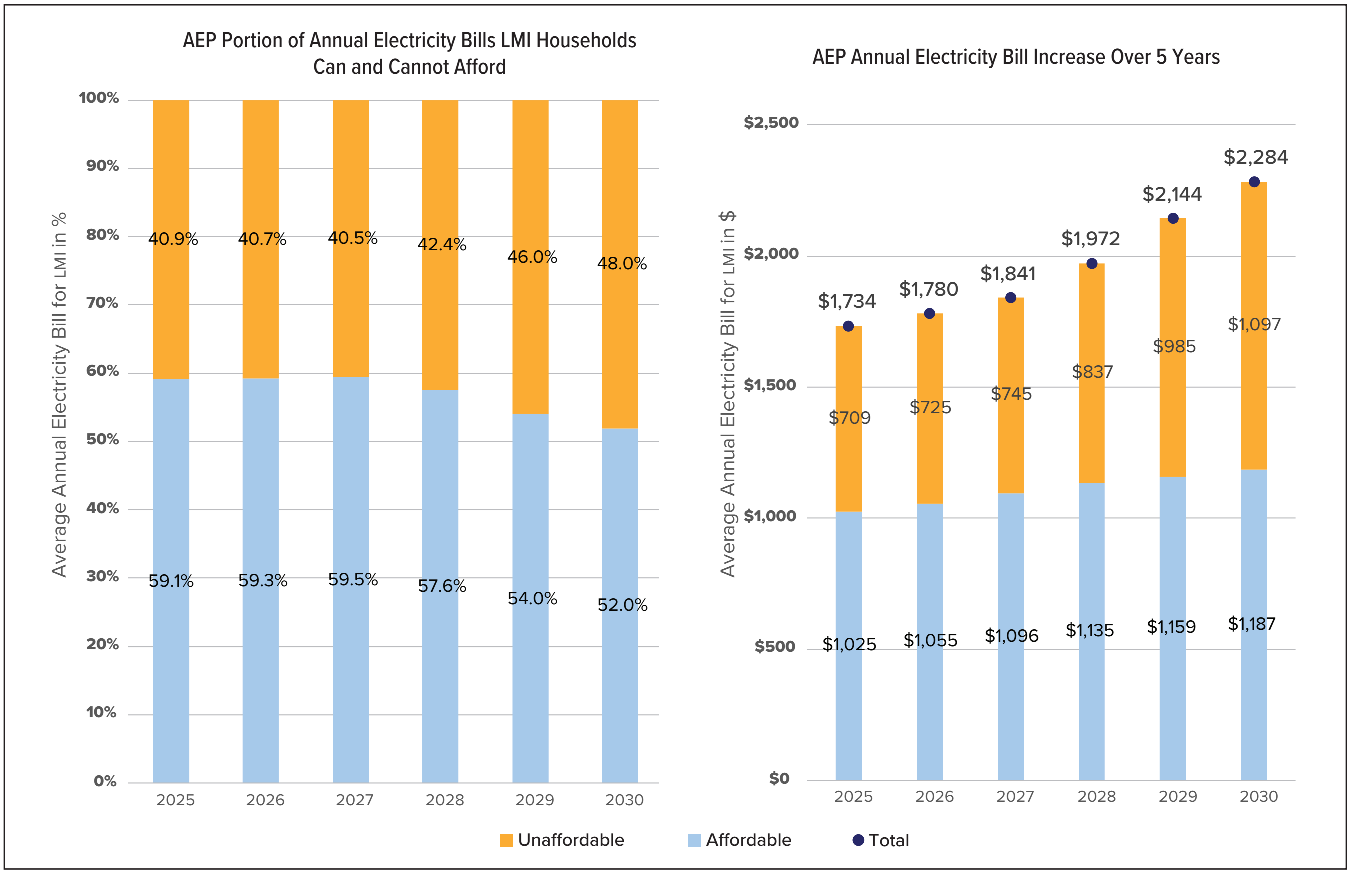
CenterPoint LMI Electric Bill Increases

Figure 14. CenterPoint: Projected Bill Increase and Affordability Gap in Percent and Dollars



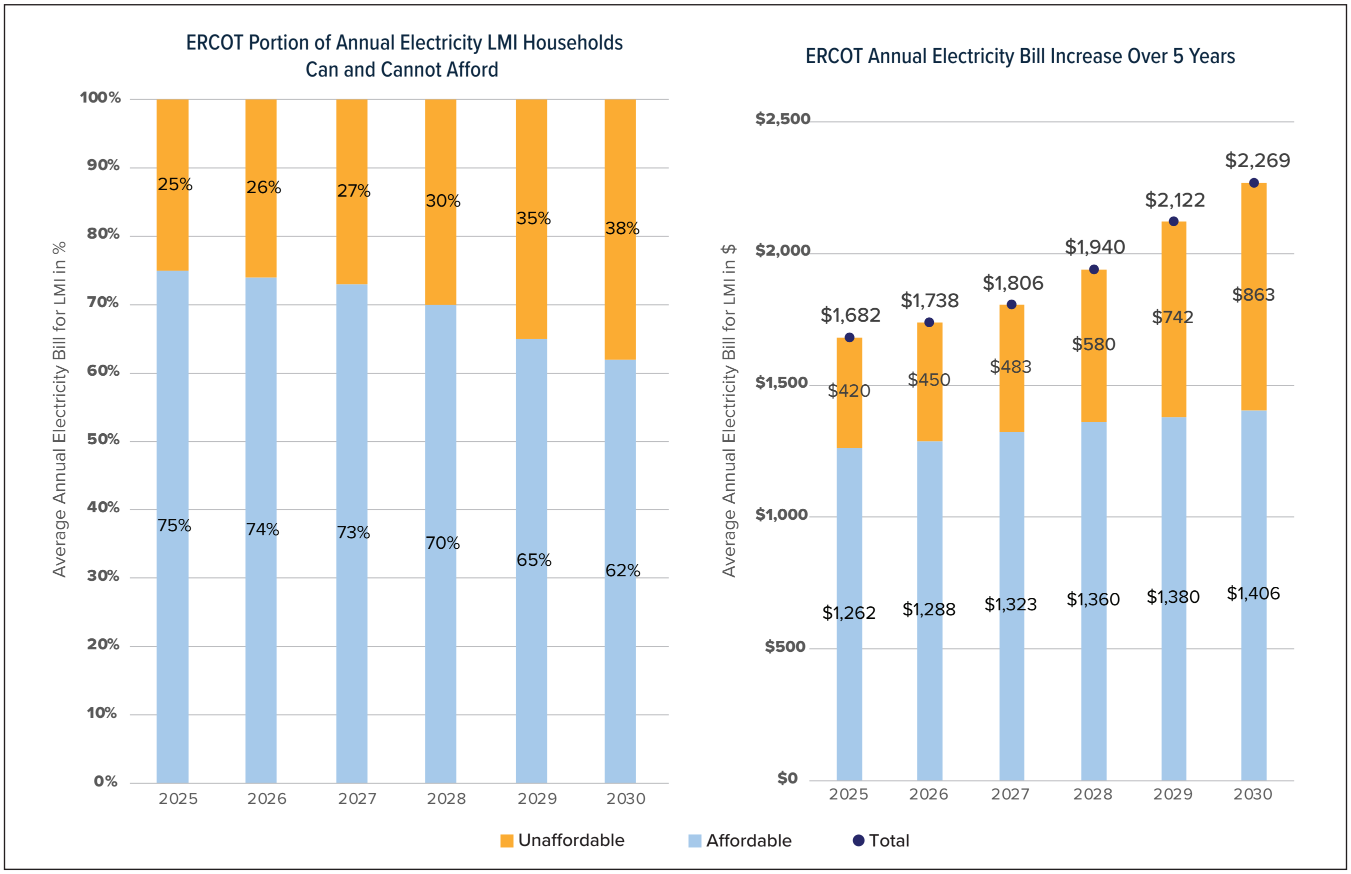
AEP LMI Electric Bill Increases

Figure 15. AEP Texas: Projected Bill Increase and Affordability Gap in Percent and Dollars



ERCOT Competitive Retail Market Average LMI Electric Bill Increases

Figure 16. ERCOT: Projected Bill Increase and Affordability Gap in Percent and Dollars



Between 2025 and 2030, affordability outcomes for LMI households are projected to worsen even under conservative assumptions for usage and income growth. While the transmission and distribution buildout described is expected to help moderate price volatility, its long-term impact on affordability will depend on transmission expansion and mechanisms for capital cost recovery. While ERCOT's Real-Time Co-Optimization reform may hold down near-term wholesale power costs, these savings will be small compared to large-scale transmission and distribution capital recovery charges.

While wholesale electricity costs are expected to fluctuate, the dominant upward pressure on residential bills will come from sustained investments in transmission and distribution infrastructure.

> The dominant upward pressure on residential bills will come from sustained investments in transmission and distribution infrastructure.

Beyond price changes, several structural factors amplify the affordability challenge. The combination of inefficient housing stock, limited access to weatherization programs, and a retail market structure that can expose households to complex or higher-cost electricity plans contributes to higher electricity burdens even when average rates remain moderate. These factors reflect the state's high overall electricity consumption, driven by extended cooling seasons, and energy-inefficient housing conditions—conditions that disproportionately affect low- and moderate-income households.[66]

In summary, TEPRI's Affordability Forecast shows challenges that increase over time. Even accounting for a modest 2% annual household income growth, average electricity burden across ERCOT is projected to rise from 6.7% in 2025 to 8.2% in 2030 (see Figure 12). Interacting forces suggest that the financial burden on households, especially LMI customers, will continue to increase through the end of the decade.

5. ADDITIONAL IMPACTS TO RATES

While our price model captures the primary cost drivers shaping ERCOT's affordability trajectory, a range of external factors could further influence future prices. This section explores variables that fall outside the projection framework but have the potential to significantly affect household electricity affordability.

Beyond the baseline forecast, several factors could substantially alter electricity affordability for Texans in the coming years. Extreme weather events, shifts in federal policy, and pending changes to ERCOT's transmission cost allocation rules could each affect electricity costs for households. Additionally, technological innovations such as Demand Response or Virtual Power Plants that provide financial incentives to participants might help reduce the burden on bills. Other factors, such as increased energy efficiency and weatherization, or a transition toward greater use of heat pumps to replace resistance heating, could also have a meaningful impact on bills. These drivers are not fully captured in the current model but represent critical uncertainties that could amplify rate impacts for LMI customers. Appendix C lists additional variables that could affect prices and affordability but were not included in the model.

5.1 Extreme Weather Events

Extreme weather events, such as intense summer heat and severe winter storms, as well as destructive events like the May 2024 derecho affecting the Houston area, will continue to contribute to future customer costs in Texas. For example, the May 2024 derecho caused damages that necessitated approximately $425 million in utility recovery costs, collected through an estimated $1 per month surcharge for CenterPoint customers.[67]

Ultimately, the devastating effects of severe storms necessitate increased spending on grid repairs and upgrades. Under legislation such as Senate Bill 1963 (89th Legislature, Regular Session), which amended Texas Utilities Code § 36.451, utilities now have authority to issue system restoration bonds with PUCT approval to recover extraordinary costs from extreme weather events.[68] This mechanism spreads repayment over decades by embedding additional surcharges to customer bills, similar to the ongoing "storm recovery costs" from Winter Storm Uri.[xix] More recently, the PUCT has required TDUs to develop and submit formal resiliency plans outlining infrastructure hardening and system reliability investments.[69] These plans are reflected in current rate projections but remain subject to change as implementation timelines, regulatory guidance, and capital recovery mechanisms evolve.

These climate extremes add a compounding layer of risk for LMI households. In addition to bill impacts, service interruptions during such extreme weather events can be life-threatening, particularly for households that live in poor-quality housing or already limit their use of air conditioning or heating to try to keep electricity bills down. Unfortunately, such impacts are expected to increase. Research from the Texas State Climatologist "reveals a concerning acceleration in extreme weather conditions across the state."[70]

> Research from the Texas State Climatologist "reveals a concerning acceleration in extreme weather conditions across the state."[68]

More frequent extreme weather events and longer, hotter weather seasons also compress the "shoulder months" traditionally used for planned maintenance on transmission and generation assets.[71] This

xix Storm recovery costs from Winter Storm Uri are REP fuel cost recovery charges, not TDU charges.

increases the likelihood of forced generation outages and tightens supply just as consumption peaks, tightening capacity margins and driving pricing upward.

Together, these dynamics demonstrate that extreme weather not only amplifies household vulnerability but also shapes system-level costs and financing decisions that can have lasting impacts on rates for years to come. It's important to note that targeted resilience investments can temper both reliability risks and long-term rate impacts. Research from Aurora DSM estimates that increased demand response participation and wider heat pump adoption could avert $1.7–$2.3 billion in outage-related costs during future extreme winter events.[72]

Research from Aurora DSM estimates that increased demand response participation and wider heat pump adoption could avert $1.7–$2.3 billion in outage-related costs during future extreme winter events.[70]

5.2 Potential Price Impacts from Public Law 119-21

Several reports have analyzed the potential impacts on energy prices, as well as economic, labor, and emissions impacts, resulting from the combined actions in Public Law 119-21, the One Big Beautiful Bill Act (OBBA), signed into law on July 4, 2025. Key provisions include a rapid phasing out of technology-neutral clean energy tax credits and the addition of complex material supply chain requirements. Analyses by Princeton University's ZERO Lab and Energy Innovation conclude that the OBBBA will drive substantial price increases between 2025 and 2035 by slowing clean energy project development amid rapid load growth, while new natural gas generation fails to keep pace, particularly through 2029. These reports project that Texas would lose approximately 77 GW of planned renewable generation capacity by 2035, nearly equivalent to the state's current peak summer demand (85 GW).[73]

Only about 2.5 GW of gas-fired capacity is anticipated to replace these lost renewables, primarily due to turbine shortages and long project lead times. The result would be increased operation of existing gas plants, significantly elevating fuel use and costs.[74] In comparison to current policy scenarios, the studies estimate that the OBBBA will lead to an increase in average household energy bills of $170 -$280 per household by 2035.[75] In Texas, Energy Innovation found that the OBBBA would lead to a 150% increase by 2035 and predicted an increase in annual electricity bills for Texas households of $480 by 2035.

It is important to note that both reports forecast a substantial decrease in overall electricity generation resulting from the OBBBA, beginning in 2025. The Energy Innovation report predicts a 19% increase in wholesale electricity prices in Texas by 2030.[76] These increases are beyond what was assumed in TEPRI's price forecast presented above, which is based on adequate existing and planned capacity through 2027. Generation increases are difficult to predict at this time, and we will revisit in the future.

5.3 Changes to Transmission Cost Allocations

ERCOT's residential customers pay fixed volumetric transmission and distribution charges, as utilities recover these regulated costs through flat per-kilowatt-hour or monthly rates that remain unchanged during system peaks. In contrast, large industrial and commercial customers are assessed dynamic demand charges based on four coincident peaks (4CP).[xx] Because the cost allocation structure bases

xx "4CP" (Four Coincident Peak) refers to the four highest system-wide peak demand intervals in ERCOT each summer (one in each month from June through September). Transmission costs are allocated to load-serving entities based on their average demand during these four 15-minute intervals. Only customers with transmission-level service directly benefit from 4CP allocations; smaller commercial and residential customers billed at distribution voltage are not eligible.

charges on coincident peaks, it strongly incentivizes large transmission-level customers to curtail or shift load during peak intervals to lower their allocated costs, even when those actions do not reduce the overall need for new transmission.[77] However, few REPs provide their residential customers a reason or mechanism to shift their energy use in a way that reduces the REP's total transmission charges because most residential rate options are flat per kWh charges around the clock, rather than time or demand-based. This divergence in rate design creates a structural imbalance in cost recovery, leading to persistent differences in how proportionately each class contributes to the overall cost of the grid relative to their consumption.[78]

In the 89th Texas legislative session, legislators passed SB6 to address how large load customers (those with a load of 75 MW or more) contribute to the financial impacts utilities incur in serving them. The bill requires the PUCT to establish new rules to address TDU cost allocations, including alternatives to the current 4CP method. The legislature directed the Commission to examine options such as broader coincident-peak measures or hybrid formulas combining demand and energy metrics, which would redistribute costs across customer classes.[79] New allocation models could provide relief to residential customers. If the process for allocation isn't addressed in a manner that curtails TDU costs for retail residential customers, then consumers will find that an ever-greater share of their monthly costs result not from their retail electric provider, but from decisions about who bears the cost of the expanding grid upgrades. The Commission must review pending rule changes by the end of 2026. Those revisions may alter residential rates and consequently affect the projections outlined in this paper.

5.4 Looking ahead 2030–2035

Forecasting beyond 2030 involves considerable uncertainty. The current model analyzes near-term dynamics through 2030, projecting that new solar, wind, and battery capacity additions already in ERCOT's queue will largely offset rising demand. Beyond that period, the trajectory becomes less clear. Analyses from Princeton University's ZERO Lab project and Energy Innovations suggest that there will be price escalation after 2030 if clean-energy deployment slows while load growth continues.

Future system conditions could shift in several directions. Widespread deployment of small modular nuclear reactors or robust virtual power plant networks could enhance reliability and reduce household costs. Conversely, increased storm intensity or prolonged recovery cycles could strain infrastructure and push rates higher. These divergent possibilities highlight the growing uncertainty of ERCOT's post-2030 affordability outlook.

6. AFFORDABILITY CHALLENGES FOR HOUSEHOLDS WITH LOW-TO-MODERATE INCOMES

Access to affordable, reliable electricity is not just an economic concern; it is a public health necessity. For LMI Texans, rising energy costs create a series of compounding challenges. Households may face service disconnections or cut back on other essentials to keep up with bills. For LMI Texans, high energy costs can mean unsafe indoor conditions, reduced access to modern-day essentials such as the internet, or cutbacks on food and medicine. This section examines how each of these factors shapes affordability and household well-being and draws on TEPRI's Community Voices in Energy Survey, a survey of over 6,500 LMI households across Texas. Community Voices highlights the behaviors, experiences, and priorities of LMI households.

Key Findings:

- More than one in ten LMI Texans experienced an electricity disconnection within the past year, underscoring the depth of affordability challenges.
- 72% of respondents to TEPRI's Community Voices in Energy Survey reported cutting back on household expenses to pay electricity bills, with 29% reducing food spending and 44% reducing clothing purchases.
- Over half of LMI households practice energy-limiting behaviors, such as turning off air conditioning or heating during extreme weather, to reduce costs, thereby heightening health and safety risks.

These coping strategies reveal that energy insecurity compounds other forms of economic and housing vulnerability, compounding the financial challenges with public-health concerns.

6.1 Household Energy Shutoff Warnings & Disconnections

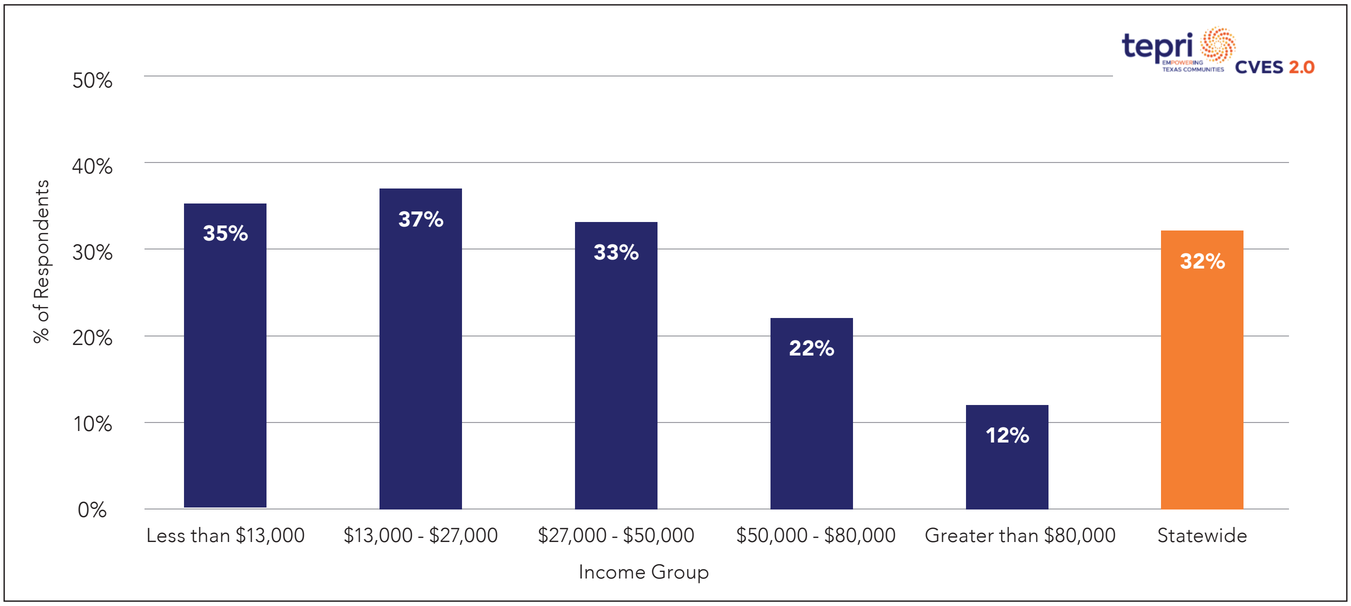
When household budgets are stretched thin, even a slight increase in electricity prices can push families into arrears. Shutoff warnings and service disconnections are a visible consequence of affordability challenges, with direct implications for health and household stability. Survey data of LMI Texans show more than 1 in 10 respondents experienced an electricity service disconnection in the past year.[80] Shutoffs can have severe health and safety consequences, including loss of refrigeration for food and medication, unsafe indoor temperatures, and spiraling financial distress caused by costs incurred for reconnection. Texas has limited safeguards (e.g., protections for medically vulnerable customers and prohibitions during extreme weather). Still, utilities are not required to report disconnection data, leaving gaps in the public's understanding of the issue.

> Survey data of LMI Texans show more than 1 in 10 respondents experienced an electricity service disconnection in the past year.[78]

> Widespread disconnections and the resulting accumulation of arrears can reverberate throughout the energy system.

Beyond immediate household hardship, widespread disconnections and the resulting accumulation of arrears can reverberate throughout the energy system. Outstanding debt from nonpayment introduces credit risk for utilities and retail providers, which can constrain their ability to borrow affordably for infrastructure improvements and, in turn, delay investments that support long-term reliability. These financial pressures may also shift costs to other ratepayers, as losses from defaults are recovered through charges or uplift mechanisms, a pattern that echoes the long-term surcharges imposed after Winter Storm Uri. In this way, arrears and shutoffs affect not only vulnerable customers but also the broader stability, affordability, and reliability of Texas's energy markets.

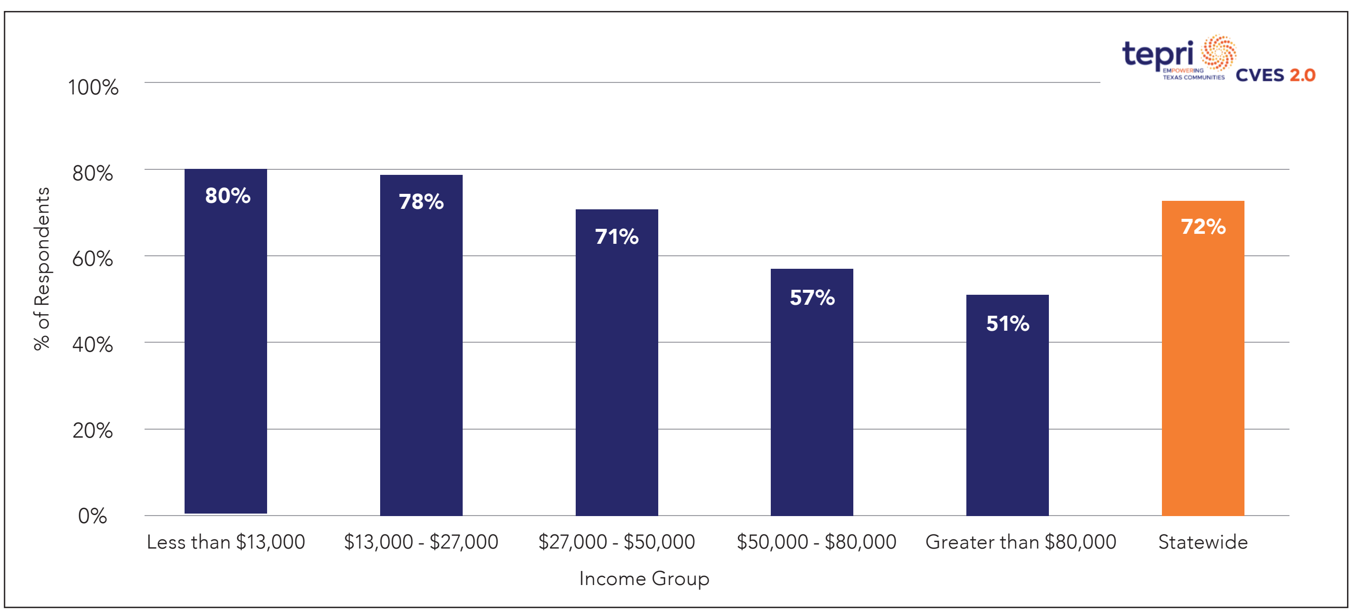
Figure 17. Percentage of Respondents Who Experienced a Shutoff Warning, a Disconnection, or Both, by Income Group[81]



6.2 Financial Trade-Offs: Cutting Back on Basic Household Needs

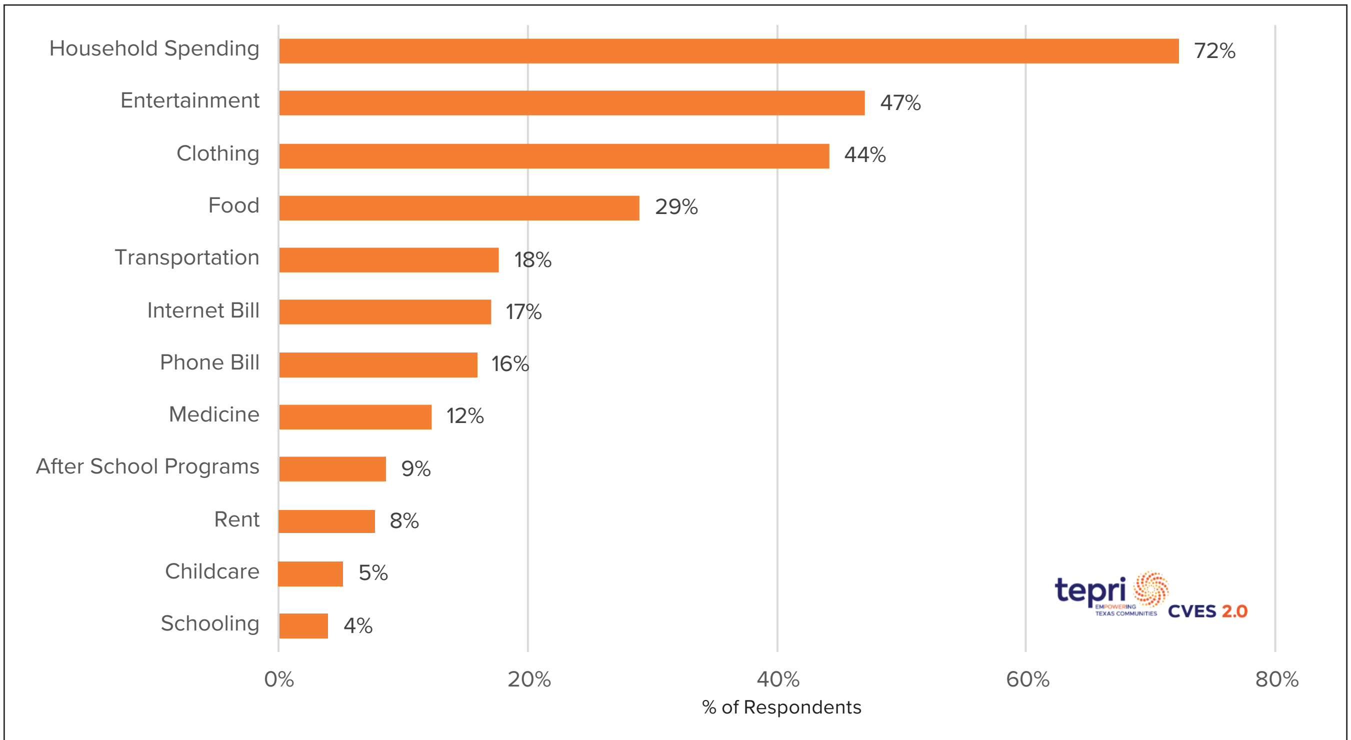
Beyond the threat of disconnection, many LMI households cope with high bills by reducing spending on other essentials. These trade-offs illustrate the hidden costs of electricity insecurity, as families sacrifice food, clothing, and other necessities to keep the lights on.

Figure 18. Percentage of Respondents Cutting Back on Basic Household Needs to Afford Energy Bill, by Income Group[82]



Statewide 72% of respondents from TEPRI's Community Voices Survey reported reducing household spending to pay their electric bills.[83] Among households earning under $13,000, 80% cut back on essentials, with 40% strongly agreeing they had to make sacrifices (Figure 18).[84] Common cutbacks include food (29% of respondents), clothing (44%), and general household expenses (nearly 75%), see Figure 19.[85] Such reductions can directly affect nutrition, health, and overall quality of life, particularly for already economically vulnerable households.

Figure 19. Categories of Basic Household Needs that LMI Respondents Reduced to Afford Electricity[86]

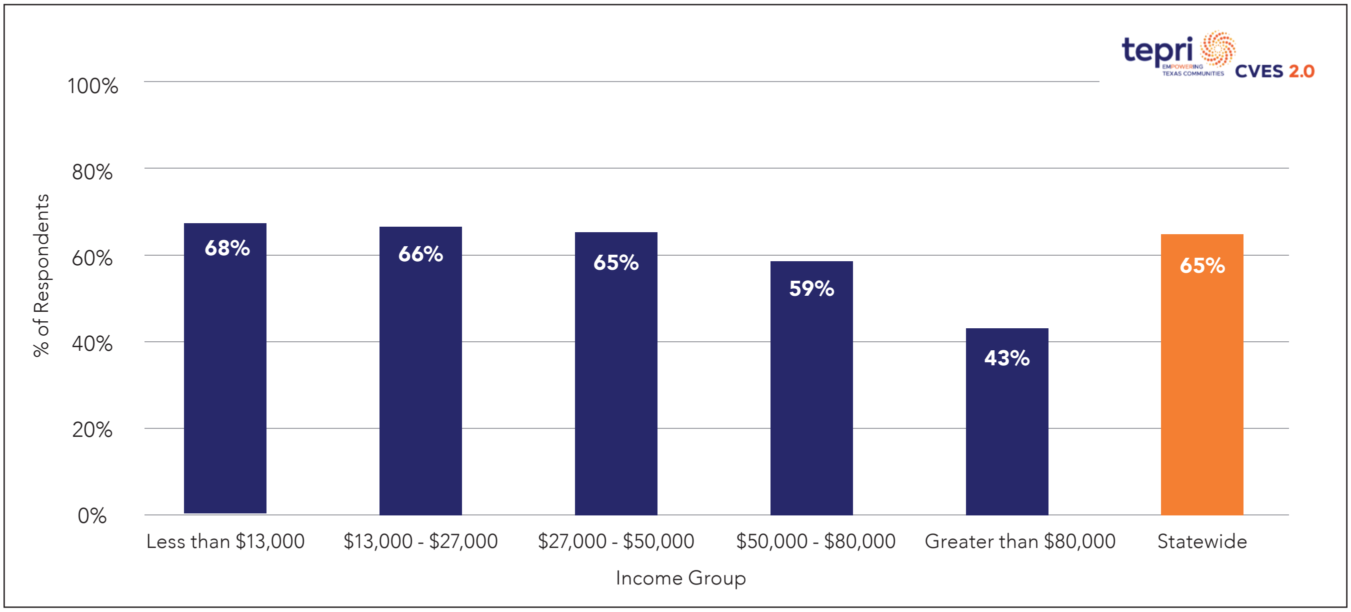


Additionally, many low-income Texans take drastic steps to keep their electricity bills manageable, often at the expense of comfort and safety. The Community Voices in Energy Survey found that more than half of respondents reported practicing at least one energy-limiting behavior, such as turning off or setting their air conditioners and heaters to uncomfortable temperatures to save money. Among households earning under $27,000 a year, these behaviors were even more common: about 60% turned off or reduced heating in winter, and over one-quarter statewide shut off air conditioning during summer months.

Despite these measures, many of the same households still received shutoff warnings or disconnections, indicating that energy rationing alone is not enough to prevent arrears. Energy-limiting behaviors underscore how financial strain pushes families to cut back on essential energy use while still facing the risk and consequences of losing service entirely.

Statewide, 72% of respondents from TEPRI's Community Voices Survey reported reducing household spending to pay their electric bills, with 80% of households earning under $13,000 cutting back on essentials.

Figure 20. Percentage of Respondents Who Reported Practicing at Least One Energy-limiting Behavior by Income Group[87]



6.3 LMI Low-Quality Housing and Renter Disadvantage

LMI households are far more likely to rent than own their homes. Renters experience unique challenges as their landlords lack incentives to make energy efficiency or weatherization upgrades that could positively impact bills. The split incentive, where one party pays for the improvement and another benefits, is a challenge for renters. Landlords are discouraged from making improvements, especially for lower-income renters who are limited in their ability to pay higher rents, since they will not see any financial return. Bill-lowering strategies, such as heat pumps, insulation, and upgraded windows, are not financially viable investments for renters.

7. BILL MITIGATION STRATEGIES

Strategies such as energy efficiency improvements, deployment of DERs, and bill-assistance programs are increasingly vital for mitigating monthly utility costs for Texans.

In 2023, only about 5% of eligible households received bill assistance.[86]

One key resource is the federal Low Income Home Energy Assistance Program, administered by the U.S. Department of Health and Human Services, which provides financial assistance for energy bills, emergency repairs, and interventions to prevent disconnections. However, as energy costs continue to rise, the program's statutory caps on household benefits are expected to dilute its impact. In 2023, only about 5% of eligible households received assistance,[88] and while charitable organizations, such as churches, step in, their efforts remain insufficient to meet the widespread need.

Corresponding initiatives, including federally and utility-funded Weatherization Assistance Programs, aim to address the underlying causes of high energy costs by reducing consumption through home retrofits, such as insulation, air sealing, and window replacement. These interventions require significant resources and face eligibility barriers, as many households that meet income thresholds are disqualified because of structural issues such as mold or building code violations.[89] Estimates suggest that approximately one in five homes fails to qualify for weatherization upgrades because of such conditions.[90]

TAEBA found that customers could save up to $279 per year on electricity bills if DERs were incorporated to shave peak demand.[89]

While weatherization programs focus on reducing energy waste through efficiency upgrades, DERs represent a complementary strategy that lowers household energy burdens by shifting when and how energy is produced and consumed. The technical and market potential for widespread and coordinated management of flexible loads and behind-the-meter DERs—such as battery storage, distributed solar, energy efficiency, and other connected technologies—is expanding rapidly. By coordinating these resources, DERs can provide valuable grid services and reduce peak demand, helping to offset the high costs of expanding traditional transmission and distribution infrastructure. The Texas Advanced Energy Business Alliance (TAEBA) estimates that approximately 13% of infrastructure costs could be offset through better utilization of DERs. In their analysis of DER potential in the Oncor service territory, they found that customers could save up to $279 per year on electricity bills if DERs were incorporated to shave peak demand.[91]

Research on DERs underscores their significant role in improving both affordability and health outcomes for households.[92] Despite declining costs, many DER technologies, particularly solar panels and battery storage systems, which are likely to deliver significant benefits, remain out of reach for low-income households who are often renters. Additionally, households with low incomes often lack the financial means or creditworthiness to purchase and maintain the assets.

ERCOT is currently evaluating a market offering that would incentivize REPS to incorporate smart thermostat residential demand-response aggregations.[93] Smart thermostats enable utilities or aggregators to remotely adjust cooling and heating settings during periods of high system demand in exchange for customer compensation. These programs could reward households for behaviors they already practice, such as reducing air-conditioning use during peak hours, while helping stabilize system load. In the future, similar programs could expand to include other controllable devices, such as electric water heaters, battery systems, or smart appliances, that can be aggregated to provide grid flexibility. However, households without central air conditioning or compatible technologies may be unable to participate, limiting the reach of these programs.

8. CONCLUSION

TEPRI's ERCOT Electricity Affordability Outlook: Forecasting Residential Electricity Prices and Burdens (2025–2030) presents anticipated electricity price increases and affordability impacts for the ERCOT region from 2025 to 2030. TEPRI's analysis reveals that energy affordability will continue to be a profound challenge for people who contend with low incomes. While ERCOT's retail electricity rates remain similar to peer states with similar climates, prices have been rising at a faster rate and are projected to continue on an upward trajectory.

TEPRI's analysis reveals that energy affordability will continue to be a profound challenge for people who contend with low incomes.

Between 2021 and 2025, average residential electricity prices in the ERCOT Competitive Retail Market rose by roughly 30 percent, adding $35–$40 per month to the typical LMI household electricity bill. Looking ahead, rates are projected to rise another 29 percent by 2030, largely due to transmission and distribution investment and cost recovery. These investments—totaling over $58 billion from major TDUs and an additional $38 billion in ERCOT-approved transmission projects—are essential for grid modernization and reliability, but they also exert persistent upward pressure on retail prices.

By 2030, the average electricity burden is expected to rise from 6.7 percent to 8.2 percent of household income, and the share of bills deemed unaffordable will climb from 25 percent to nearly 40 percent.

For LMI households, these increases translate into significant affordability challenges. By 2030, the average electricity burden is expected to rise from 6.7 percent to 8.2 percent of household income, and the share of bills deemed unaffordable will climb from 25 percent to nearly 40 percent. TEPRI deems electricity burdens over 5% to be unaffordable. In dollar terms, this means the average annual affordability gap will double from $420 in 2025 to $863 in 2030. These pressures compound other household vulnerabilities already reflected in TEPRI's Community Voices in Energy Survey, where over half of respondents report cutting back on essentials or practicing energy-limiting behaviors to afford their electricity bills.

Addressing affordability will require more than bill-payment assistance. A comprehensive strategy must combine targeted energy-efficiency and weatherization investments, expanded demand-response participation, and market integration of DERs that can reduce system costs and improve resilience. Policy reforms that strengthen consumer protections, fairly allocate TDU investments across customer classes, and ensure equitable access to new technologies will also be critical as the state transitions toward a more electrified and data-intensive economy.

Ultimately, ensuring electricity remains both reliable and affordable is central to Texas's long-term economic vitality and social well-being. As ERCOT navigates record load growth and modernization demands, continued analysis and data-driven policy design will be essential to balance system investment with household affordability so that all Texans, regardless of income, can share in the benefits of a secure, resilient, and robust energy future.

APPENDIX A. DATA & METHODS FOR HISTORICAL RATES

The statewide series (2010–2025) uses EIA's state-level sales/revenue data to compute average residential prices (¢/kWh).[94] TDU-specific, all-in estimates for Oncor, CenterPoint, AEP Central, and AEP North are shown for 2020–2025 only; they're benchmarked to retail-plan snapshots that publish typical total residential prices at ~1,000 kWh/month and cross-checked against statewide levels for reasonableness.[95]

We validated magnitudes using historical TDU delivery ("wires") schedules—per-kWh adders plus fixed monthly charges—to ensure the wires component aligns with the totals.[96]

We confine TDU histories to five years because retail offers are not centrally archived, public delivery/tariff postings retain only recent versions, and reporting practices have evolved; combined with ERCOT's decentralized market design and record-retention norms, older comparable TDU series are unreliable. Reported TDU values, therefore, reflect typical all-in residential prices (not regulated tariffs) for standard fixed-rate offers around 1,000 kWh/month; actual bills vary by plan, term, and usage.

APPENDIX B. MODELING METHODOLOGY AND KEY ASSUMPTIONS (2025–2030)

This appendix outlines the modeling framework and technical assumptions used to project ERCOT residential electricity rates and affordability outcomes for low-to-moderate-income (LMI) households through 2030. The model isolates three primary rate components—wholesale electricity costs, transmission, and distribution—and applies component-specific escalation assumptions derived from ERCOT, PUCT, and EIA data. While wholesale electricity costs fluctuate modestly during the forecast period, transmission and distribution infrastructure investments represent the largest and most persistent drivers of retail rate increases. The forecast model was designed by Kit Pevoto,[97] A recognized cost allocation and rate design expert in the industry. Ms. Pevoto has worked in the Texas electric regulatory industry for more than 30 years, including twelve years at the Public Utility Commission of Texas. Ms. Pevoto testified in the spring of 2000, when the Commission was determining the transmission and distribution (T&D) rates for new T&D utilities in ERCOT, before the competitive retail market in ERCOT started in 2021. The Commission adopted her recommended T&D rate design that has been uniformly applied to all ERCOT TD utilities.

Part I. Retail Residential Electricity Price Forecast

Step 1. Establish 2025 Baselines for Retail Residential Electricity Prices

Baseline values for retail residential prices ($/kWh) were estimated by averaging the highest and the lowest REP retail pricing offers for a 12-month contract service, advertised by REPs on Power to Choose website,[98] For each study TDU one day in September. (see Table 3, Section 3.2).

Step 2. Forecast Electricity Usage for the Residential Sector in Each TDU

Residential load growth was modeled at +2 percent per year for Oncor[99] and +1 percent per year for CenterPoint[100] and AEP Texas,[101] Consistent with ERCOT's 2024 Regional Transmission Plan and TDU capital filings.

Step 3. Forecast Price Components

Each price component was projected independently and then combined to determine the total retail residential price (¢/kWh).

a. Wholesale Electricity Costs, Plus REP Markup

Average wholesale electricity prices per TDU were not available. Instead, wholesale electricity costs plus REP markup were estimated for each TDU by subtracting transmission and distribution and PUCT-regulated charges from the total retail electricity price in Step 1. Power generation rates projected in the U.S. Energy Information Administration's Annual Energy Outlook 2025 were directly applied to these baseline estimates.

Appendix B Table 1. Projected Generation Rates in Texas, 2024–2030 [102, xxi]

	2024	2025	2026	2027	2028	2029	2030
Gen ¢/kWh	6.399	6.028	5.635	5.076	5.103	5.603	5.895
Year by year change		-6%	-7%	-10%	1%	10%	5%

xxi Generation rates are expressed in nominal ¢/kWh.

The following helps to explain the trends in the EIA outlook and informs our analysis:

- **Current Generation Capacity:** ERCOT's current generation capacity (180 GW) is sufficient to meet the projected demand through 2027 (87 GW for 2025, 95 GW for 2026, and 104 GW for 2027).[103] Generation rates are expected to decline during these years. From 2028 through 2030, generation resources are not expected to be adequate to meet the load demand growth, which is expected to increase rates year over year.
- **Interconnection Queue:** Approximately 409 GW of new generation is currently seeking interconnection, mostly solar (39%) and storage (43%); assuming interconnection, these will expand supply and lower costs.[104]
- **Planned Dispatchable Generation:** About 10 GW of dispatchable generation is expected to come online between 2025 and 2027,[xxii] which would mitigate the tight market conditions that frequently occur during summer evening hours in ERCOT and lower generation rates.
- **Real-Time Co-Optimization:** The planned launch of Real-Time Co-Optimization (RTC) in December 2025 is expected to improve dispatch efficiency and reduce overall market generation costs. Based on prior modeling by ERCOT's Independent Market Monitor (IMM), RTC could lower energy costs by as much as $4 per megawatt-hour; however, actual savings will depend on implementation parameters and market conditions.[105]
- **Expiration of Federal Tax Credits:** The expiration of the federal clean energy tax credits is expected to increase generation costs beginning in 2028.[106] Section 6.2 provides further details on this topic.

b. Transmission & Distribution Rates

Substantial investments are planned in transmission and distribution over the next 5 years, by ERCOT and the TDUs. These expenditures reflect grid modernization, customer-growth connections, and system hardening. Because distribution rates are directly regulated and passed through to retail bills. Transmission and distribution rate projections follow the cost-of-service framework used by the Public Utility Commission of Texas (PUCT). The process occurs in four key steps:

i. Identify planned transmission and distribution investments ($)

Each utility's capital plans specify the amount it intends to invest in expanding or upgrading its transmission and distribution facilities for each forecast year.

xxii The 10 GW new dispatchable generation represents the total generation capacity associated with the projects selected by PUCT that receive grants and loans for financing the construction, maintenance, modernization, and operation of electric facilities in Texas through the Texas Energy Fund (TEF) In-ERCOT Generation Loan Program. The TEF programs, which provide funding opportunities for electric generation projects, are mandated by the Texas Legislature, which appropriated a total of $9 billion to support the funding.

Appendix B Table 2. Planned Transmission & Distribution Investment Plans by ERCOT and the TDUs

Component	Planned Investment (2025–2030)	Primary Purpose
ERCOT's Regional Transmission Plan (2024 RTP)[107]	**$38 B** (includes $15 billion for STEP)	Systemwide upgrades (includes STEP 765-kV expansion); increase transfer capacity to meet ≈148 GW load growth[108]
Oncor, *Quarterly Results & Capital Plan*[109]	**≈ $36 B**	Expand transmission and distribution systems. (2025–2029)
CenterPoint Investment[110]	**≈ $21 B** through 2030	Expand transmission and distribution systems
AEP Texas, *System Resiliency Plan*[111]	**$ 940 M** over 3 years	Expand transmission and distribution systems. AEP Texas sees an annual 8% increase in its distribution costs and has PUCT's approval to invest $940 million over 3 years to strengthen its transmission and distribution system

ii. Convert investment to annualized cost of service ($)
Planned investments are converted into annualized cost-of-service values that the PUCT allows utilities to recover from ratepayers. This includes a return on investment, operating and maintenance costs, depreciation, and taxes, derived from the utility's prior rate cases.

iii. Allocate costs to the residential rate class ($)
The portion of cost of service assigned to residential customers is determined using PUCT-approved class-allocation methodologies from the utilities' most recent rate proceedings.

iv. Calculate incremental T/D rates
The residential class's share of the cost of service is divided by projected annual kWh consumption for that class. This incremental rate is then added to the current-year rate, producing the higher rate that takes effect when the new investment enters service.

Total T&D Prices in Cent/kWh Forecast for 2026 through 2030					
	2026	**2027**	**2028**	**2029**	**2030**
Oncor	6.73	7.82	8.74	9.53	10.27
CenterPoint	7.03	8.31	9.41	10.38	11.29
AEP Texas	6.80	7.84	8.78	9.51	10.23

c. Other PUCT-Regulated Charges
Components such as the Energy Efficiency Cost Recovery Factor, Storm Cost Recovery Factor (for CenterPoint and AEP Texas), and Temporary Emergency Electric Energy Facilities surcharge are expected to remain stable through 2030 and were held constant in the model.

Part II. Forecast Electricity Affordability

To estimate future affordability outcomes for LMI households, projected retail electricity rates and usage were applied to household-level electricity bills and compared against forecast incomes. The following procedures were applied consistently across all three TDUs—Oncor, CenterPoint, and AEP Texas—and aggregated ERCOT-wide using LMI household weights.

Step 1. Establish 2025 Baselines for Household Electricity Use and Burdens

Baseline values for household electricity usage (kWh), annual electricity cost ($), energy and electricity burden (% of income), and number of LMI households were obtained from TEPRI's Energy Equity Explorer, which integrates 2025 datasets from the DOE LEAD Tool, U.S. Census ACS, and CDC Social Vulnerability Index (SVI). These metrics define starting conditions for the three largest ERCOT TDUs—Oncor, CenterPoint, and AEP Texas—which together account for roughly 70 percent of ERCOT's residential load.

Step 2. Project Household Electricity Usage & Bills

a. Project electricity usage (kWh/hh)
Annual residential load growth per household was modeled by applying annual load growth (1-2%/yr) assumptions from Part I, Step 2, to the previous year's household electricity consumption (kWh/household/yr), beginning with the 2025 baseline. This usage growth is an estimate and may not fully capture all factors and trends influencing future household-level electricity consumption. For example, extended hot weather seasons and continued electrification of homes could drive up electricity use, but improved demand-response technology could have a positive effect.

b. Forecast Electricity Bills ($)
Projected usage values were then multiplied by forecasted retail rates (¢/kWh) to obtain annual electricity bills for each year in the study period.

Formula: Annual Bill (year *t*) = Projected Usage (year *t*) × Projected Rate (year *t*)

Step 3. Establish Annual Income Values ($)

Household income baselines were derived from Area Median Income (AMI) estimates at the census tract level within each TDU service territory.[112] Income values ($) were assumed to increase 2% per year, representing modest income growth while recognizing that rising bills are expected to outpace earnings for many low- and moderate-income households.

Formula: Household Income (year *t*) = Baseline Income (2025) × (1.02)^(*t*–2025)

Step 4. Calculate Electricity Burden (%)

Electricity burden measures the share of household income devoted to electricity expenses. Higher electricity burdens indicate reduced household affordability and greater vulnerability to rate increases.

Formula: Electricity Burden = (Annual Electricity Bill ÷ AMI) × 100

Step 5. Establish Electricity Burden Threshold and Calculate Electricity Affordability Gaps (EAG)

a. **Establish Electricity Burden Threshold:** To evaluate whether electricity costs are affordable for Texas households, TEPRI applies a 5 % affordability threshold. This threshold is derived from the standard 6% energy-burden benchmark (which represents the total share of income typically considered affordable for all home energy expenses) and adjusted to reflect Texas's heavy reliance on electricity.

   Texans spend approximately 73 %–91 % of their total household energy costs on electricity, with an average electric-to-fuel ratio of about 80 % (see Table 4).

   Formula: (Energy burden) 6 % × (Electricity bill ratio) 80% = 4.8% **≈ 5%**

   Therefore, **electricity is defined as affordable when total annual costs do not exceed 5% of household income**. Any portion of a household's bill above this 5 % threshold is considered unaffordable. This adjustment reflects the state's high electricity consumption driven by large homes, extended cooling seasons, and limited use of natural gas for heating.

b. **Calculate Electricity Affordability Gap (EAG)**
   These measures allow comparisons across service areas and income groups, highlighting the proportion of bills that are likely to remain unpaid or financially burdensome.

   Dollar Gap ($): EAG ($) = Annual Bill – (0.05 × Household Income)

   Percent Gap (%): EAG (%) = (EAG $ ÷ Annual Bill) × 100

Step 6. Aggregate Across ERCOT

Affordability results for Oncor, CenterPoint, and AEP Texas were aggregated into ERCOT-wide averages using weighted LMI household counts for each TDU service area. This approach ensures that results reflect the population distribution and relative energy costs experienced by low-income households across ERCOT's competitive retail market.

APPENDIX C. VARIABLES NOT INCLUDED IN ERCOT ELECTRICITY RATE AND AFFORDABILITY FORECAST (2025–2030)

Additional variables may also influence future electricity rates and affordability, but were excluded from this analysis due to limited data availability or measurement challenges. This list is non-exhaustive.

Variable & Name	Definition	Hypothesized Impact	Data Source
Household Employment Stability	Measures of unemployment rates, underemployment, and job stability by sector.	Rising unemployment or unstable job hours will reduce household income and increase energy affordability challenges, while lower unemployment and stable jobs will improve households' ability to pay.	Bureau of Labor Statistics—Local Area Unemployment Statistics; Texas Workforce Commission
Extreme Weather Events	Severe weather events such as heatwaves, hurricanes, winter storms, flooding, tornadoes, derechos, earthquakes, etc.	Extreme weather events that become more frequent or severe will cause infrastructure damage, necessitating greater grid investment and leading to higher costs and rate increases for consumers.	NOAA National Centers for Environmental Information; FEMA disaster cost databases; ERCOT storm recovery filings.
4CP Transmission Cost Allocation Changes	Regulatory modifications to ERCOT's Four Coincident Peak methodology for allocating transmission costs, prompted by SB6 (2025).	Reforms that shift more transmission cost responsibility from large industrial customers to residential customers will reduce affordability. Conversely, reforms that lower residential customers' share of costs will improve affordability. Because rules are under review, changes could significantly alter forecast results.	Public Utility Commission of Texas dockets; ERCOT filings; SB 6 legislative text

Distributed Energy Resources Market Offerings	Demand response (DR) programs encourage electricity customers to reduce or shift usage during peak demand periods in response to price signals or utility incentives. As DERs (e.g., solar, batteries, smart thermostats, EV chargers) proliferate, aggregation into Virtual Power Plants (VPPs) allows households to provide grid services and receive compensation. In ERCOT, residential DR and VPP aggregation are still emerging and under regulatory consideration.	Residential DR and VPP participation can reduce peak demand, defer system costs, and improve affordability by enabling households to monetize their flexibility through bill credits or shared savings. Accessibility depends on technology ownership and enrollment pathways. Households already engaging in energy-limiting behaviors may have limited flexible load to monetize, raising equity concerns and the need for inclusive program design.	ERCOT stakeholder filings; PUCT demand response proceedings; DOE demand response studies; ERCOT ADER Pilot Phase 3
Trade Tariffs on Energy Infrastructure	Government-imposed duties on imported goods, such as steel, aluminum, solar panels, or transformers, that are critical to energy infrastructure and generation projects.	An increase in tariffs raises the short-term cost of building new generation or transmission infrastructure, which may reduce the number of feasible projects, constrain supply growth, and lead to higher consumer rates. Over the longer term, however, tariffs could encourage onshoring of manufacturing for critical components, which may strengthen domestic supply chains and eventually lower costs. Conversely, reduced tariffs make infrastructure expansion more affordable in the near term, potentially improving affordability for consumers.	U.S. International Trade Commission; U.S. Department of Commerce; ERCOT interconnection queue filings
LNG Exports and Domestic Fuel Supply	U.S. liquefied natural gas (LNG) exports represent natural gas produced domestically that is sold into global markets. Export demand reduces the amount of fuel available for domestic power generation.	If LNG exports increase, the domestic natural gas supply tightens, raising electricity generation costs and reducing affordability for consumers. If exports fall, more domestic supply is available, easing generation costs and improving affordability.	EIA Natural Gas Exports; Federal Energy Regulatory Commission; DOE LNG export authorizations

Omitted TDUs: Texas New Mexico Power Company (TNMP) & Lubbock Power & Light (LP&L)	Smaller TDUs operating within ERCOT serving residential and commercial customers across multiple service territories. TNMP is responsible for ~5-6% share of the ERCOT system load, while LP&L recently integrated portions of its service area into the competitive market.	Excluding TNMP & LP&L from the model could bias system averages for transmission and distribution charges. Because rates, load share, and customer base differ from those of other TDUs, omission could distort regional affordability comparisons and system-level averages.	PUCT rate cases and filings; ERCOT load share data; TNMP & LP&L annual reports
Inflation	Inflation is the rate at which the general prices of goods and services increase over time, reducing the purchasing power of money.	Inflation raises the cost of fuel, labor, and equipment for utilities. Those rising costs can be passed on to customers through higher energy rates. If incomes don't increase at the same pace, a larger share of a household's budget goes toward energy bills, reducing affordability.	Federal Reserve Economic Data
Energy Efficiency and Weatherization	Energy efficiency and weatherization programs reduce energy waste in homes through measures such as insulation, air sealing, HVAC upgrades, and efficient appliances. In Texas, the Public Utility Commission of Texas is evaluating updates to the Energy Efficiency Improvement Program rules, including potential expansion of utility efficiency goals and eligible measures for low-income households. At the federal level, Weatherization Assistance Program funding is subject to congressional appropriations, meaning that funding could be expanded (or reduced) in future cycles.	Expanded EEIP rules and increased utility targets can reduce household energy use and peak demand, lowering bills and improving reliability. Federal weatherization funding expansion would amplify these benefits by enabling more low-income households to receive no-cost upgrades that permanently reduce energy burden. Funding cuts, by contrast, would limit access to weatherization, leave high-burden households without efficiency improvements, and reduce long-term affordability gains.	PUCT EEIP rule evaluation dockets; utility EEIP filings; DOE Weatherization Assistance Program studies; ACEEE efficiency program benchmarking.

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