Remarks on Transmission Cost Allocation and Rate Design in ERCOT

Travis Kavulla, Vice President, Regulatory Affairs,

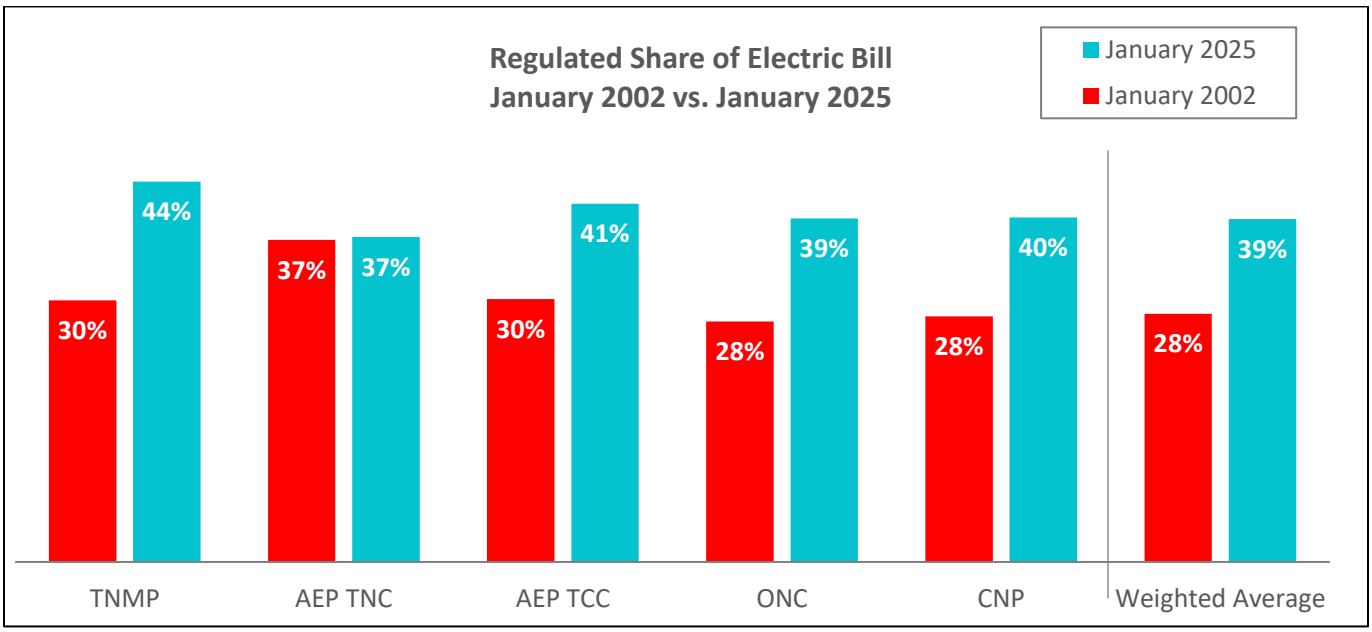
ERCOT Market Summit

Austin, Texas

February 25, 2025

I often hear that the grid is underinvested in, and I suppose my standard question to that is why, if that is the case, have transmission costs risen so rapidly? ERCOT's wholesale transmission rate has risen 116% since 2013, far outpacing the rate of inflation.[1] Another $14.90 billion in transmission projects have been approved for construction or in the process of being constructed.[2] And in addition to that, the PUCT is considering this Spring whether to spend between $30 and $33 billion in yet more transmission projects[3]—the single largest package of transmission anywhere in North America.

Figure 1. Regulated Share of Electric Bill of Average Residential Customer, January 2002 vs. January 2025[4]



[1] This growth in the ERCOT transmission rate significantly exceeds inflation. If the rate had increased in line with inflation, it would be only $41.45 per kilowatt-year. Calculation derived from Bureau of Labor Statistics Consumer Price Index calculator. https://www.bls.gov/data/inflation_calculator.htm

[2] ERCOT, System Planning and Weatherization Update, at slide 9 (Feb. 3, 2025), *available at*: PowerPoint Presentation.

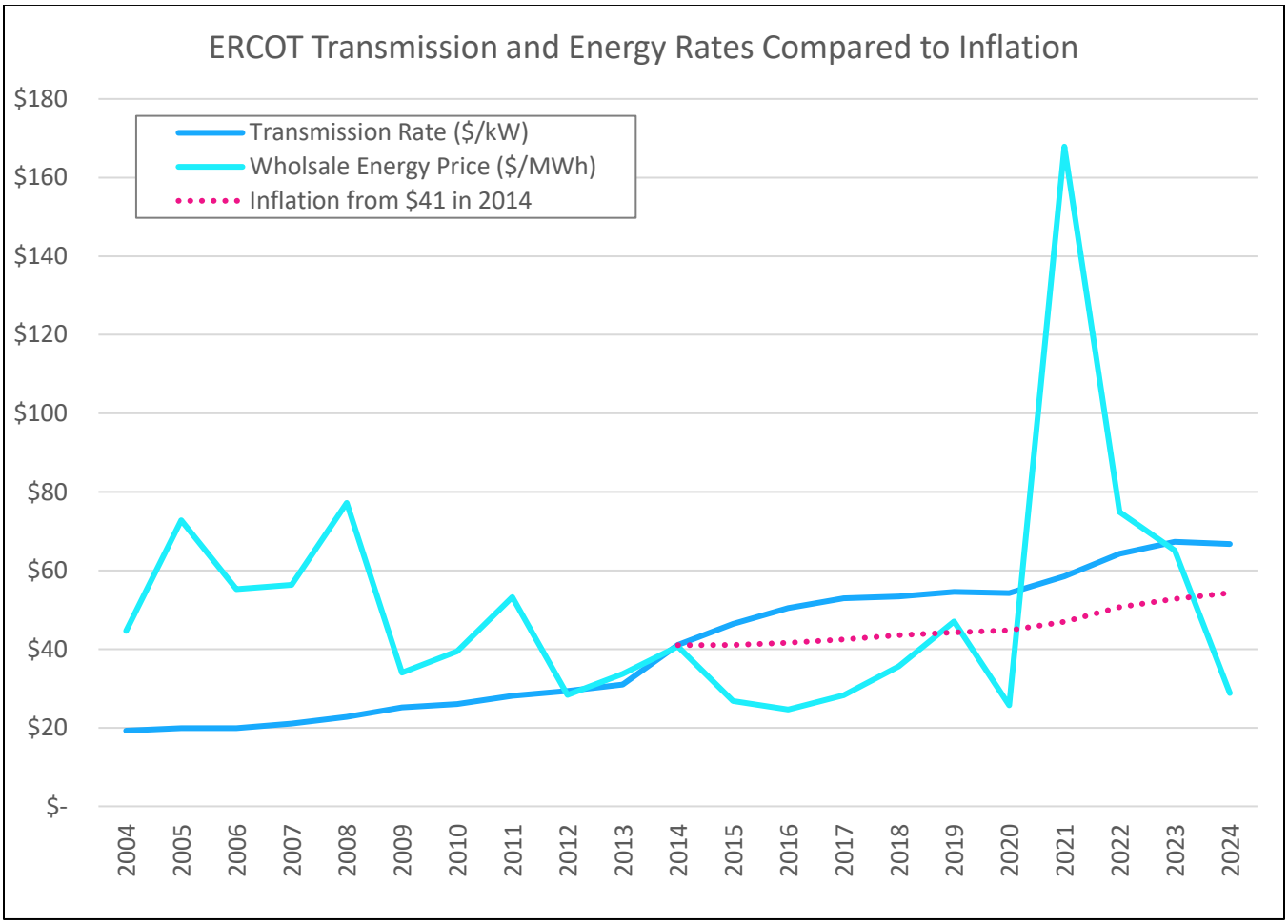
[3] Project No. 55718, ERCOT, 2024 Regional Transmission Plan 345-kV Plan and Texas 765-kV Strategic Transmission Expansion Plan Comparison, at iii (Jan. 24, 2025), *available at:* 55718_54_1462478.PDF.

[4] January 2002 Incumbent Price-to-Beat from: PUCT "Price to Beat" Presentation to House Regulated Industries Committee, dated 4-21-05, page 4. January 2025 from: Average of prices posted to powertochoose.org on 1/6/2025 includes all 12-month Fixed Rate Postpaid Plans (excludes plans with fees, credits, minimum usage charges, and TOU components).

Even before the nearly $50 billion in new spending has been factored into customer bills, the transmission and distribution (T&D) portion of the bill for an average residential customer has grown significantly since the start of retail competition. For example, the portion of the average residential customer bill in Houston comprised of regulated charges has increased from 28% at the start of retail competition to 40% today.[5] Without reforms to transmission cost allocation, based on NRG's estimation, the investments the Commission is set to approve this Spring would increase transmission costs for that consumer by more than $200 annually, pushing the "regulated costs" share of the bill even higher.

As this trend continues, consumers in the Texas competitive retail market will open their bills and find that an ever greater share of their monthly costs result not from their choice of a retail electric provider, but from decisions of the grid's central planners.

Figure 2. ERCOT Transmission and Energy Costs Compared to Inflation[6]



[5] *Compare* January 2002 Incumbent Price-to-Beat: PUCT "Price to Beat" Presentation to Texas House Regulated Industries Committee at 4 (Apr. 21, 2005) *with* January 2025: Average of prices posted to powertochoose.org on Jan. 6, 2025 (includes all 12-month Fixed Rate Postpaid Plans and excludes plans with fees, credits, minimum usage charges, and TOU components).

[6] Transmission Rate from: Commission Staff's Petition to Set Wholesale Transmission Service Changes for the Electric Reliability Council of Texas, Inc. Wholesale Energy Price from: Annual State of the Market Report for the ERCOT Electricity Market (Potomac Economics). Inflation from $10 in 2004 from: USD Inflation, Annual Rate, Bureau of Labor Statistics, CPI.

Told another way, the recent history of the power sector in Texas, and elsewhere, has been about locking in sunk costs representing a particular view of the future—as opposed to an industry that features competition and innovation. Because of the split regulated/competitive regulatory model that exists in Texas, nearly every dollar spent in transmission is a dollar wagering other people's money, while most power generation, distributed energy resources, virtual power plants, and other resources have to stand on their own with no recourse to a captive consumer base. The difference in these business models is obvious when one looks to price trends in transmission prices versus energy prices in Texas. The cost-of-service regulatory model is basically unidirectional—forever trending up—while energy pricing as you can imagine shows prices that form based on the actual value of energy in relation to demand, and where new innovations and new competitors in the market can lower the price for everyone.

Texas is justifiably famous for its competitive model for electricity. But it's important we talk about the other side of this—a largely unreformed industry that is still regulated under cost-of-service regulation. NRG supports necessary transmission investments, but that pursuit should also take into account the substantial cost impacts on the average residential customer and harm to the competitive retail market if the status quo is maintained.

Transmission Cost Allocation in ERCOT

Putting aside the sheer costs involved, the Texas status quo unfairly charges residential customers for transmission spending that is predicated not on their needs, but on the needs of large customers—who, due to Texas regulatory policy, may avoid paying anything at all toward the grid's costs.

Transmission costs in ERCOT have been allocated based on the 4CP methodology since the implementation of restructured wholesale and retail competitive markets over 20 years ago. Under this methodology, transmission costs are allocated from the total ERCOT transmission cost-of-service revenue requirement (TCOS) to each distribution service provider (DSP) on the basis of the DSP service territory's 15-minute peak load interval during each of the four summer months of June, July, August, and September.[7] In turn, each DSP further allocates the transmission costs to each of its customer classes, again on the same 4CP basis. Finally, rates are calculated to collect those costs from each customer class based on the approved tariffs of the applicable TSP. For large industrial and commercial customers, 4CP is again used in those tariffs, consistent with the upstream allocation of costs. Meanwhile, residential customers—even though the costs were allocated to their class based on 4CP—pay rates that are based on energy consumption using a volumetric charge per kilowatt-hour.[8] Therefore, unlike other customers, large customers can reduce their share of the total transmission costs by reducing their electricity consumption during those four 15-minute summer peak intervals. Moreover, by collectively reducing their class's consumption of electricity during 4CP periods, the allocation of new transmission costs to the larger load classes is further reduced. Ironically, this cost allocation will allow new large loads to potentially avoid the bulk of the cost of building the new transmission that had been justified by the emergence of these large loads.

The financial incentives created by 4CP are substantial, concentrated, and likely difficult to ignore by new large loads. ERCOT's transmission rate is currently $66.76 per kilowatt-year. A 500-megawatt large load

[7] 16 Tex. Admin. Code (TAC) § 25.192(d).

[8] This allocation methodology is reflected in the Commission-approved Retail Delivery Service tariffs for the individual TSPs: Transmission and Distribution Rates for Investor Owned Utilities (texas.gov).

can avoid $33,380,000 per year[9] in transmission costs by successfully removing their energy consumption from the grid, either through load curtailment or running backup generation, during the four 15-minute 4CP intervals.[10] Put another way, 4CP acts like a $16,700 per megawatt-hour price signal, substantially above the energy market's price cap. It is a hugely influential force on customer energy usage, indeed even more influential than scarcity energy pricing—at least for those customers exposed to it.[11]

As transmission costs have continued to increase, ERCOT has reported that the number of large customers responding to 4CP has escalated rapidly, increasing from 418 in 2022 to 1,080 in 2024 and the impact is apparent.[12] Looking only at the CenterPoint service territory for 2023, residential consumers used 33% of the electricity but were allocated 49% of the transmission costs.[13] That gap used to be narrower. In 2018, the residential class of consumers used 34% of the electricity but were allocated 46.6% of the transmission costs.[14] By comparison, the transmission connected class of consumers (the largest consumers of electricity) used 30% of the electricity in the CenterPoint territory in 2023 but were only allocated 18% of the transmission costs.[15] The longer the Commission waits to change 4CP, the more commercial and industrial businesses will become invested in its features, and the harder it will be for the Commission to change it.

The current level of participation in 4CP does not yet consider the more than $45 billion in new transmission spending. NRG estimates that an expenditure of this amount would at least double the current annual TCOS, increasing it by more than $6 billion based on a reasonable depreciation lifespan, a conservative estimate of the cost of capital, and an imputation of operating costs in line with current utility data. This spending would further strengthen 4CP-based incentives for customers to *avoid* payments toward investment in and upkeep of the transmission grid, creating an ironic and damaging feedback loop to the goals of the Commission in expanding the grid.

While transmission expansion at one point was driven more by system peak-demand considerations, this is no longer the case with the current ERCOT transmission planning process and system operation. As proof of this, the CREZ transmission lines and many others, presumably including the PBRP or a 765-kv backbone, have loading factors that may not be correlated with ERCOT system peak demand. CREZ, built to transfer renewable energy from remote locations to load centers, is often associated with energy cost benefits to load, not its ability to meet peak demand in the area they were constructed.

[9] This is calculated by multiplying ERCOT's transmission rate of $66.76 per kilowatt times 500 megawatts times 1,000 (to convert the 500 MW to kW)—66.76 x 500 x 1,000 = 33,380,000.

[10] This assumes DSP 4CP rates are consistent with the upstream 4CP ERCOT transmission rate, which over time they should be. Due to ratemaking timing issues, the actual 4CP rates for the largest DSPs range from $40,000 to $76,000 per MW-year.

[11] Again, residential customers have no ability to reduce their exposure to transmission costs by curtailing usage during 4CP. Moreover, ironically, since 4CP is paid on the basis of gross peak load, when the energy price can be relatively low due to heavy renewable production, customer responsiveness at these hours offer little in the way of supplementary system reliability value.

[12] ERCOT, 2024 Annual Report on Demand Response in the ERCOT Region, at 16 (Dec. 2024), *available at*: 2024 Report of Demand Response in the ERCOT Region.

[13] *Application of CenterPoint Energy Houston Electric, LLC for Authority to Change Rates*, PUCT Docket Nos. 56211 and 49421 (Schedule II-I-2: Class Allocation Ratios; Schedule II-H-1.3: Unadjusted Test Year Load Data).

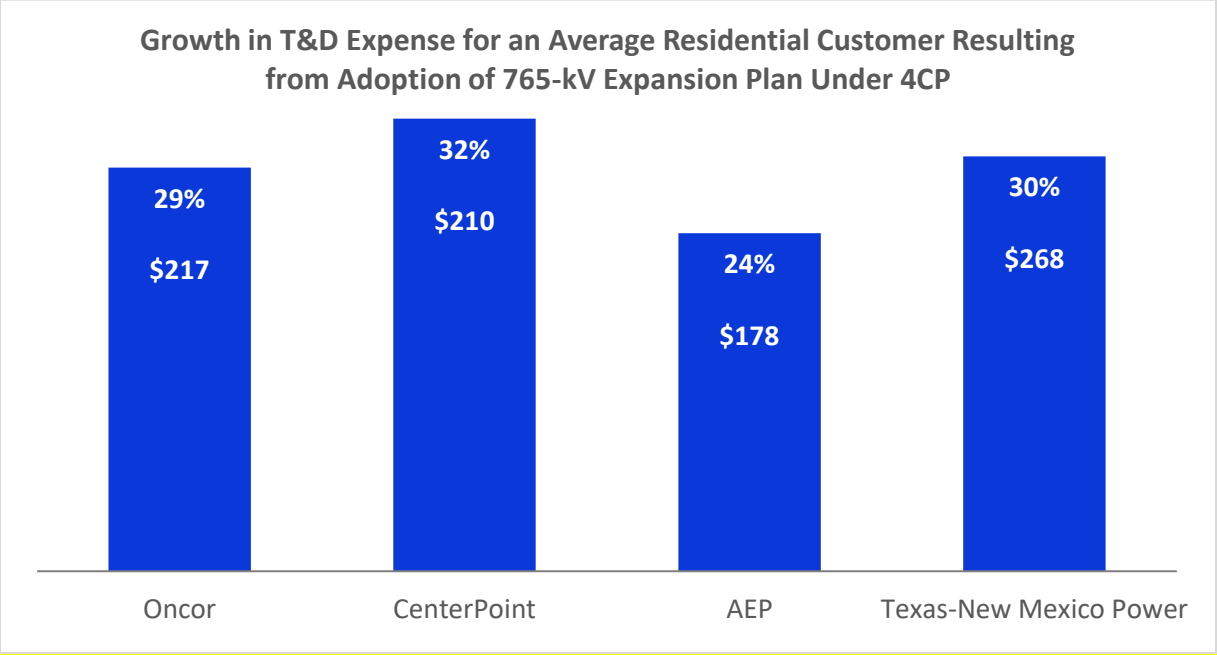
[14] *Id.*

[15] *Id.*

Residential Customer Impacts

There has been no publicly available ratepayer impact analysis undertaken in considering the Permian Basin Reliability Plan, the 765kV backbone that has been discussed for ERCOT, or the other spending incorporated in ERCOT's recent transmission planning. Using reasonable and conservative assumptions, NRG estimates the monthly T&D component of the average residential bill could increase between 24% and 32% depending on utility service territory assuming the final cost of the investment is $32.99 billion and the 4CP mechanism is not changed.[16] An average residential customer would face an additional $178 to $268 in costs annually, depending on the utility service territory in which they reside.

Figure 3. Growth in T&D Expense for an Average Residential Customer Resulting from Adoption of 765-kV Expansion Plan Under 4CP[17]



NRG disagrees with the notion that large load growth will absorb these transmission costs and help offset residential impacts. Some of that load may never materialize and, even if it does, the significant incentive under 4CP would likely encourage sophisticated, financially well-capitalized large loads to avoid transmission charges.

Texas is at a tipping point on the issue of transmission, where residential customers likely will face substantial rate increases unless costs are disciplined and properly allocated. Before any of these costs are included into consumer rates, the 4CP mechanism should be eliminated and a redesign of the transmission cost allocation completed.

Thank you for having me and I look forward to our panel's discussion.

[16] Assumptions include a 7.0% weighted average cost of capital (WACC), 30-year depreciation lifespan, 2% rate of operational expenditures necessary to support the new capital expenditures, and latest allocation ratios for customer classes.

[17] Based on current transmission tariffs at the named DSPs and modeling of additional transmission rate burden assuming the prevailing 48% allocation to the residential class and allocations to each DSP according to their 2024 4CP Load Share.