



Experience in Electricity Market Restructuring

Texas: Mostly Good

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Outline

- ❖ Texas is unique
- ❖ Overview of wholesale market restructuring
- ❖ Introducing customer choice into the retail market
- ❖ How is the wholesale market holding up?
- ❖ Introducing customer choice into the retail market
- ❖ Is customer choice working?
- ❖ Lessons learned



Texas has always been a bit unique

- ❖ Very little federal regulatory jurisdiction
- ❖ A net exporter of energy until about 10 years ago (if energy is measured in Btus). We are still a net exporter of energy if energy resources are measured by their economic value
- ❖ Leads nation in electricity generation and consumption by a large margin
- ❖ Traditionally, we enjoyed low electricity prices, but high residential bills
- ❖ Last state in the U.S. to establish a statewide system of electric utility regulation
- ❖ Lots of utilities, including over 60 rural electric cooperatives and over 60 municipal utility systems
- ❖ Very high reliance upon natural gas for electricity generation

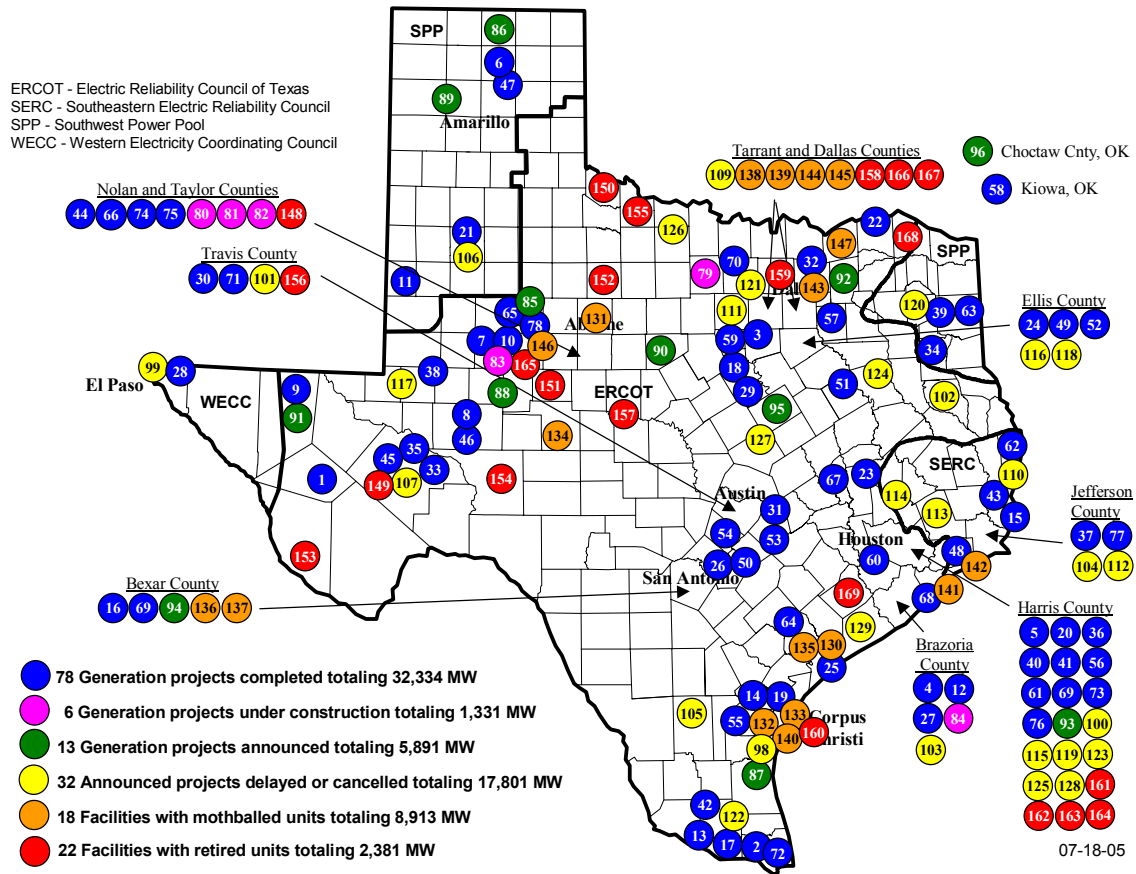


Wholesale Market Restructuring: A No-Brainer

- ❖ Successful cogeneration-related policies in the 1980s resulted in over 8,000 MW of QF cogeneration capacity
- ❖ Successful policies were established for the wheeling (transmission) of non-utility power in the 1980s
- ❖ In 1995, Senate Bill 373 amends Texas law to introduce wholesale competition in September 1995
- ❖ In the summer of 1997 the Electric Reliability Council of Texas (ERCOT) became the first Independent System Operator (ISO) in the U.S.
- ❖ Fostered by integrated resource planning requirements and favorable regulatory policies, there have been 33,000 MW of power plant capacity additions since the mid-1990s



New Electric Generating Plants In Texas Since 1995





Wholesale Market Restructuring: A No-Brainer (cont.)

- ❖ In July 2001, ERCOT's ten control areas were consolidated and operations were coordinated in a central manner
- ❖ ERCOT established markets for balancing energy and ancillary services in mid-2001
- ❖ Functional unbundling requirements prompts some of the traditional utilities to spin off their generating assets
- ❖ A market monitoring capability was established within the Public Utility Commission of Texas (PUCT)
- ❖ *In summary, there was a gradual evolution toward a competitive wholesale market in Texas*



How is the Competitive Wholesale Market Working?

- ❖ Ten control areas were successfully consolidated into one
- ❖ Reliability has been maintained
- ❖ Markets have been operating fairly smoothly
- ❖ Some market design flaws were quickly identified and fixed

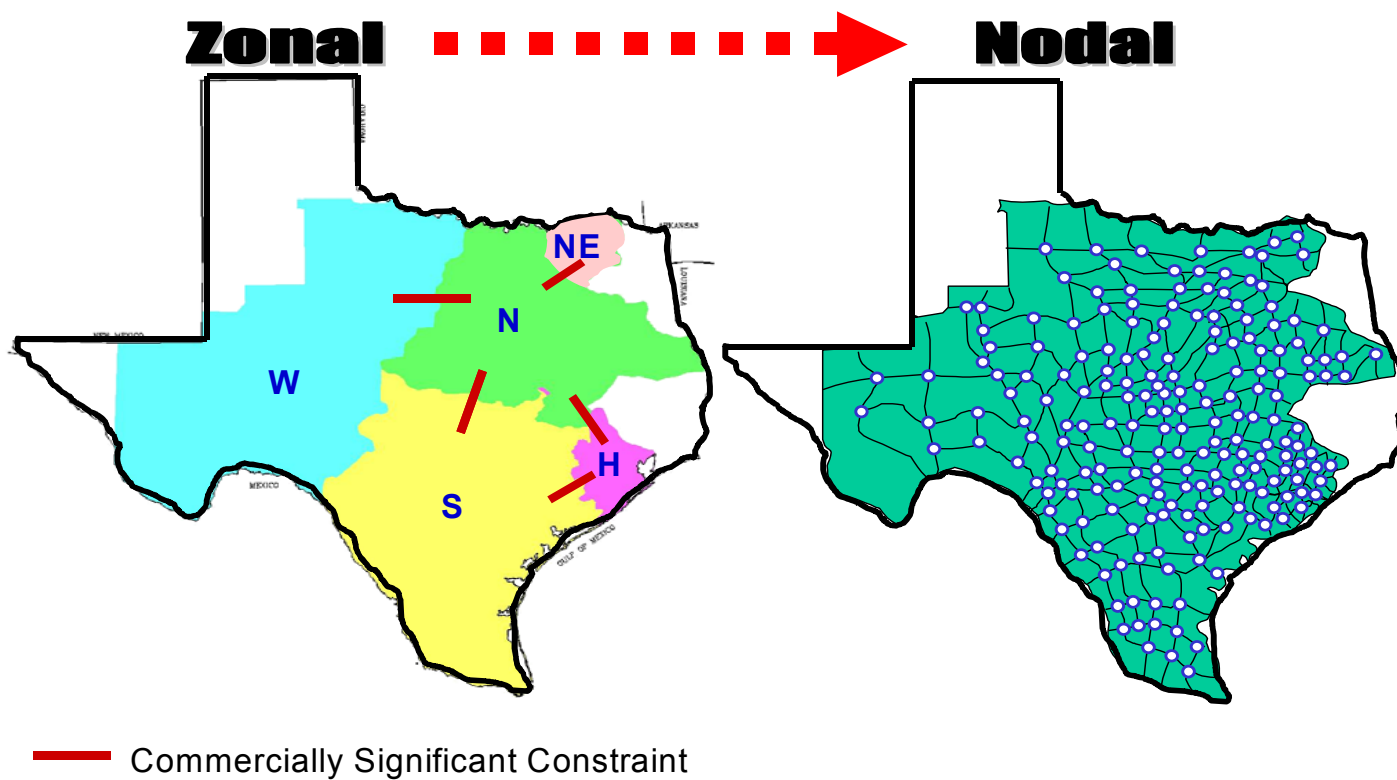


How is the Competitive Wholesale Market Working? (cont.)

- ❖ While the restructuring of the wholesale market has generally been a success, challenges remain:
 - ◆ We may have the highest market concentration of any power market in the U.S. (based on HHI calculations)
 - ◆ We are still working on developing a viable resource adequacy mechanism to ensure sufficient planning reserves
 - ◆ Generation siting decisions have created problems
 - ◆ Some market monitoring functions are being moved from the PUCT to ERCOT
 - ◆ The management of local (intra-zonal) transmission congestion has proved challenging. Consequently, ERCOT is going nodal.



A Zonal ERCOT Market Versus A Nodal Market Structure





How is the Competitive Wholesale Market Working? (cont.)

- ❖ More challenges:
 - ◆ Cases of possible market manipulation are sometimes identified
 - ◆ Occasionally, we see price reversals in ancillary services markets
 - ◆ While we have over 1,800 MW of interruptible loads certified by provide responsive reserves, we may actually have a smaller quantity of demand-side resources available to the market than we had prior to restructuring

- ❖ *Despite these challenges, we've probably been one of the more successful restructured wholesale markets.*



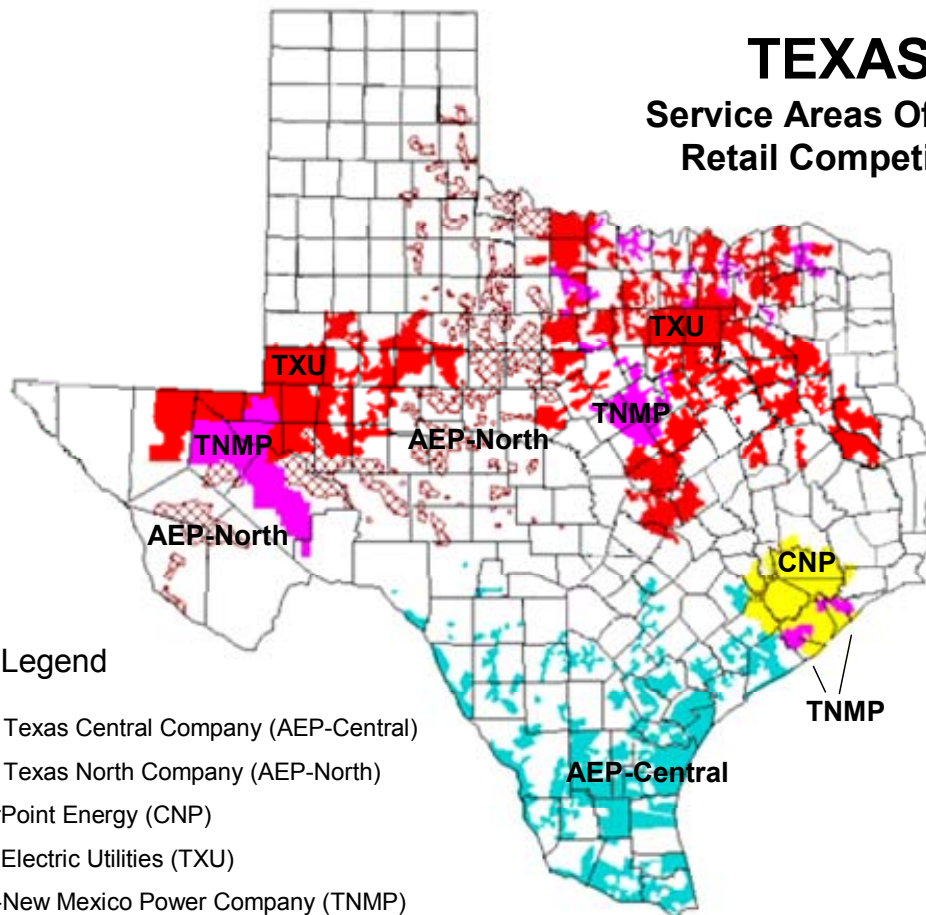
The Introduction of Customer Choice

- ❖ Restructuring plan approved by the Texas legislature in 1999 (SB 7)
- ❖ Retail choice was introduced in the service areas of ERCOT's investor-owned utilities in January 2002 (a pilot program was run during the last half of 2001).








TEXAS

Service Areas Offering Retail Competition



Legend

-  AEP – Texas Central Company (AEP-Central)
-  AEP – Texas North Company (AEP-North)
-  CenterPoint Energy (CNP)
-  Texas Electric Utilities (TXU)
-  Texas-New Mexico Power Company (TNMP)

March 2003



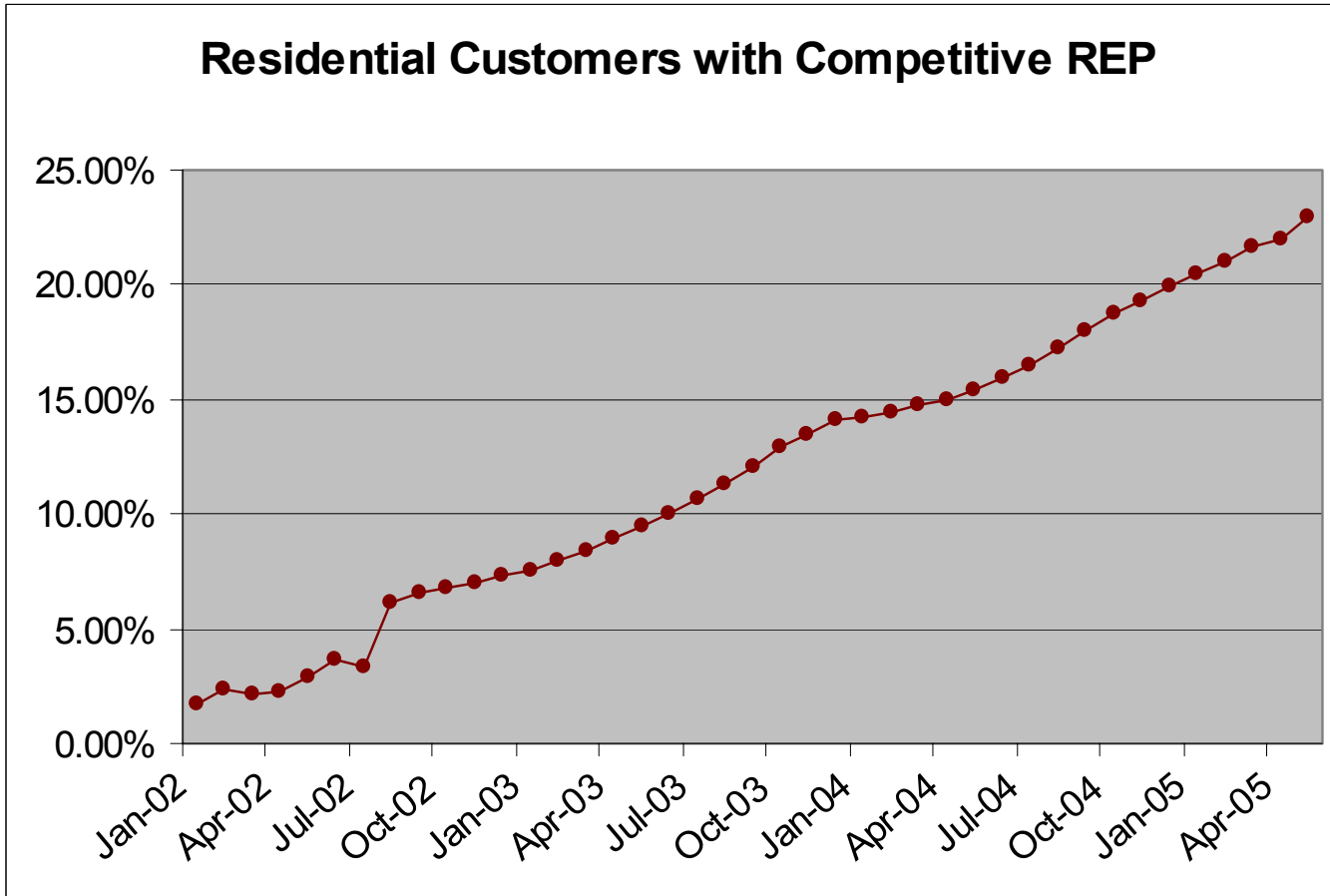
Steps in Customer Choice

- ❖ Introducing customer choice involved:
 - ◆ Opening the door to new Retailer Electric Providers (REPs)
 - ◆ Functional unbundling of the old vertically-integrated utilities
 - ◆ Establishing transitional “price-to-beat” regulated prices for customers that fail to exercise customer choice
 - ◆ Establishing a Central Registration Agent function at ERCOT to process switches and billing data



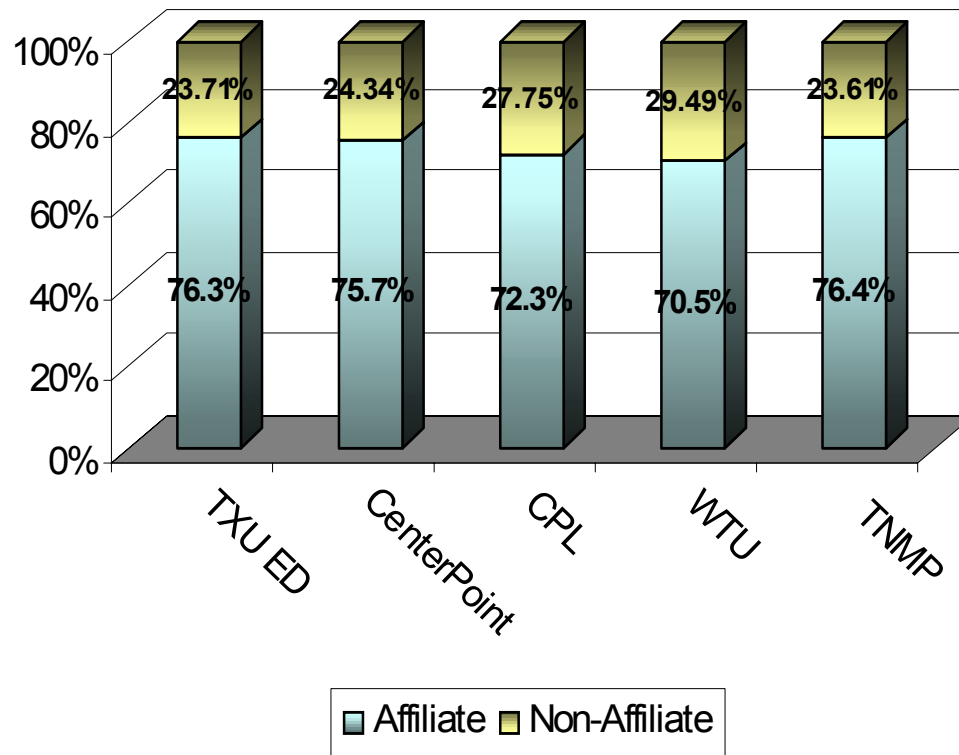
Is Customer Choice Working?

- ❖ We got off to a rough start. ERCOT's Central Registration Function wasn't fully ready at the time the market opened.
- ❖ But over the past couple years, the retail market has been operating very well.
 - ◆ We have 85 REPs certified to sell electricity to retail customers
 - ◆ About 7 to 12 REPs compete for residential customers in each competitive service area
 - ◆ Switching rates have been higher than in other restructured markets in North America



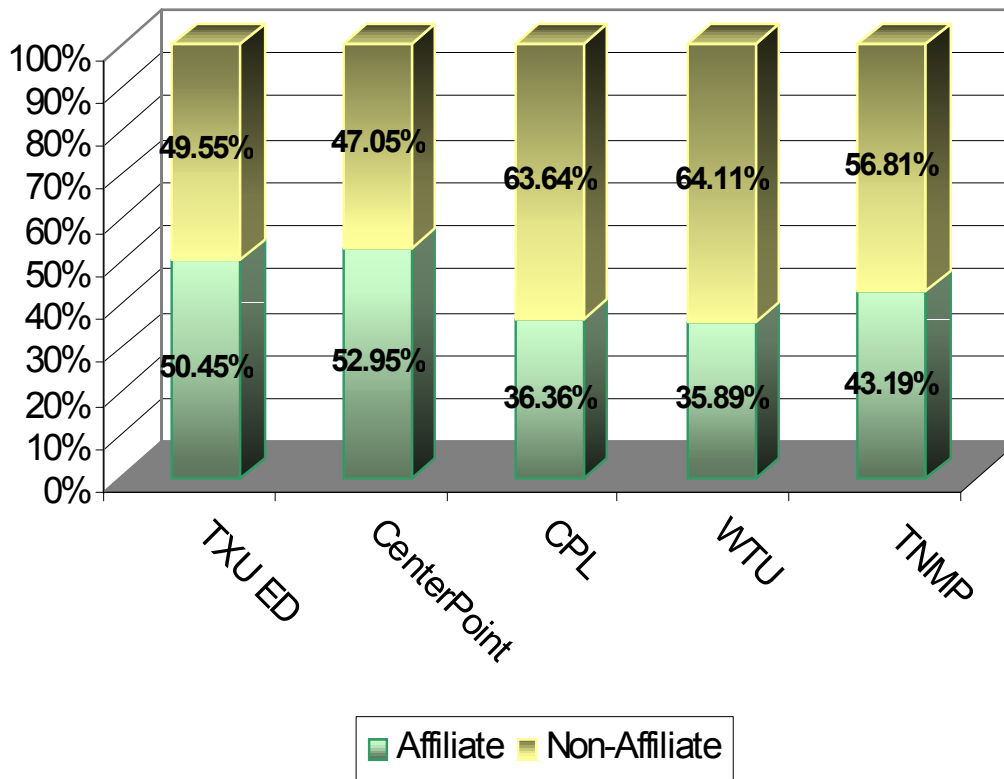


Breakdown of all customers by REP status





Percentage of Energy sold by Affiliate Status of REP





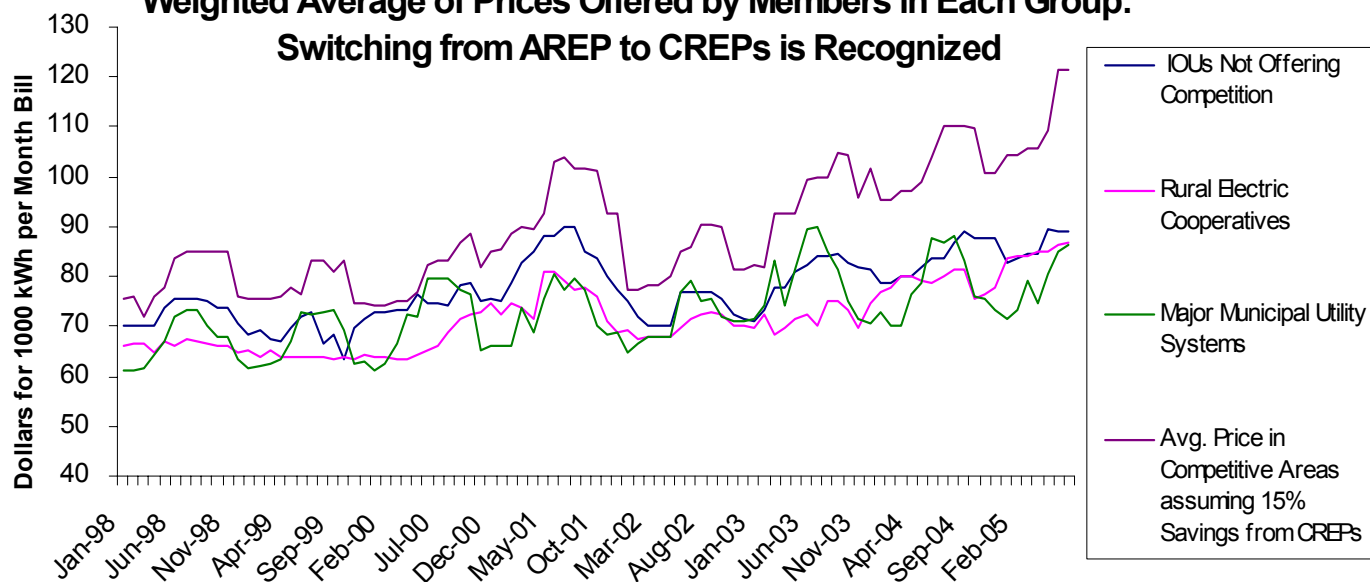
What about retail prices?

- ❖ The jury is still out on how retail prices will be affected by restructuring.
 - ◆ Larger energy consumers are probably benefiting from lower prices
 - ◆ There are still regulated price caps (the price-to-beat) for smaller energy consumers who fail to exercise customer choice
 - ◆ About 75% of residential energy consumers in competitive areas are still on the price-to-beat
 - ◆ The fuel component of the price-to-beat is indexed to natural gas prices, which have gone sky high in recent years
 - ◆ Consequently, average residential prices in the competitive areas have really shot up, relative to the prices charged in areas of Texas where competition has not been introduced



RESIDENTIAL PRICE TRENDS AMONG UTILITY GROUPS -- Updated August 2005

Weighted Average of Prices Offered by Members in Each Group:
Switching from AREP to CREPs is Recognized





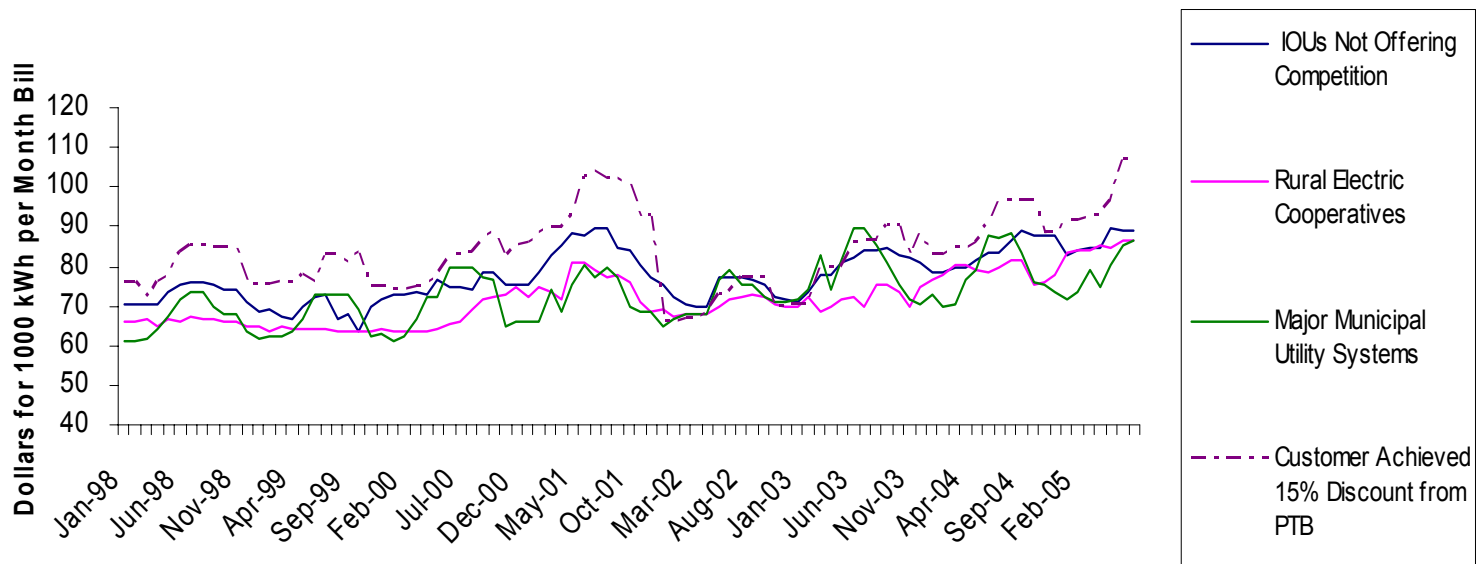
But Savings may be achieved by those who Exercise Customer Choice

- ❖ Competitive retailers have been able to offer electricity at prices below the price-to-beat in most months
- ❖ The discounts off the price-to-beat offered by low-cost retailers appears to be growing
- ❖ *After the regulated price-to-beat price caps expire in January 2007, we will be able to better examine what happens to retail prices in a competitive market*
- ❖ The following graph assumes a residential consumer achieves a 15% discount off of the price-to-beat



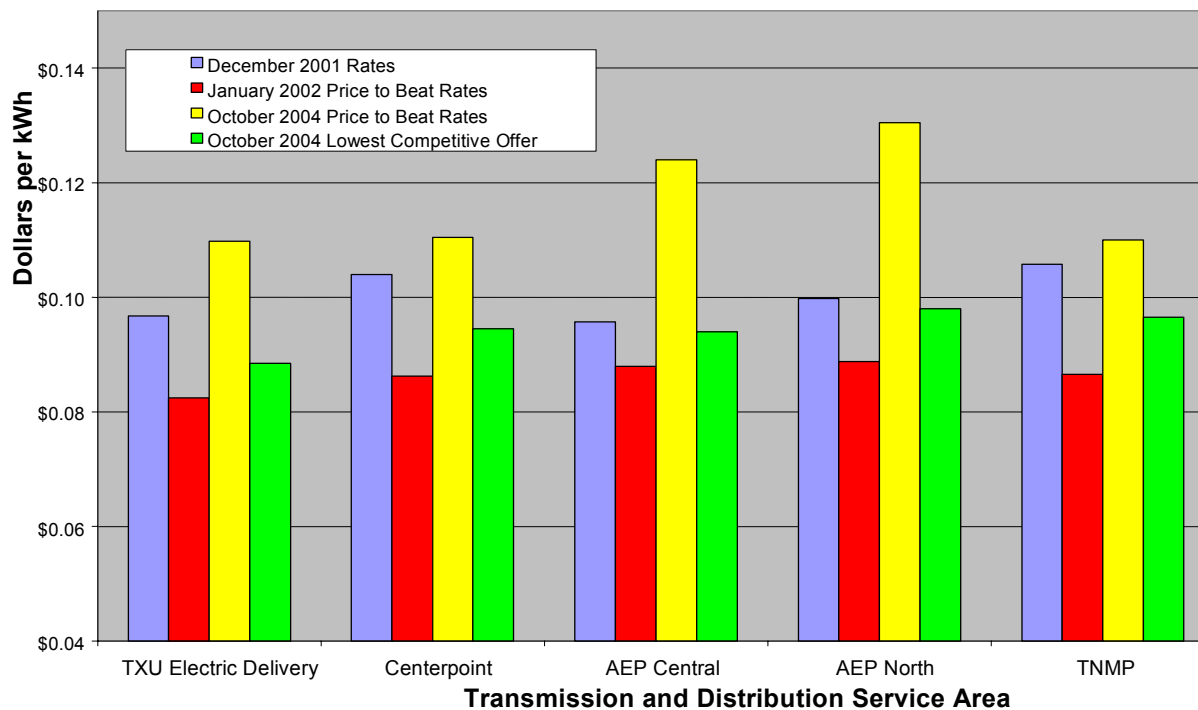
RESIDENTIAL PRICE TRENDS AMONG UTILITY GROUPS -- 15% Discount from PTB in Competitive Areas

Weighted Average of Prices Offered by Members in Each Group:





Price to Beat vs. the Lowest Residential Competitive Offer by Service Territory





Lessons Learned

- ❖ Although our market environment is a bit unique, Texas might be a good model for other markets proceeding down the path toward great competition
- ❖ Having the restructuring of the wholesale market precede the introduction of customer choice in the retail market seemed to work well
- ❖ Establishing a Central Registration Function required much more time and resources than we had anticipated. But there are long-term benefits to having an independent organization process customer switches and billing data.
- ❖ We are hoping to benefit from the experiences of PJM and other markets who have better addressed congestion management and resource adequacy