

DEREGULATED ELECTRICITY IN TEXAS

A HISTORY OF RETAIL COMPETITION

MARCH 2014



A special research project by

Texas Coalition
for Affordable Power

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This Report at a Glance

Deregulated Electricity in Texas tells the story of Senate Bill 7, the deregulation law, from the very beginning. This report is an updated version of a similar report released to the Texas Legislature in 2009. This report is organized chronologically, with a preliminary section describing the years prior to passage of SB 7. Separate annual sections, beginning with 1999, describe key deregulation milestones every year since lawmakers adopted SB 7.

About TCAP

The Texas Coalition for Affordable Power (“TCAP”), a political subdivision corporation, enjoys a unique vantage point within the state’s deregulated electricity market. Originally two separate non-profit corporations — the Cities Aggregation Power Project and the South Texas Aggregation Project — TCAP pools the resources of its more than 160 member political subdivisions to purchase electricity in bulk for the needs of local government authorities.

TCAP members purchase in excess of 1.3 billion kilowatt-hours of power each year for street lighting, office buildings, water plants and other municipal needs. An increase by even a single penny in electric rates can cost cities millions of dollars — money that can impact municipal budgets and the ability to fund essential services. High electric prices also can impact the welfare of city residents. TCAP wants what all Texans want: a fair system for delivering electricity.

- Deregulated Electricity in Texas includes a number of subsections that highlight key issues. These subsections are interspersed chronologically throughout the report. For example, subsections include one describing Enron’s activities at the formation of the deregulated market (in the 2001 chapter), and one describing stranded costs awards (in the 2011 chapter). These subsections have blue backgrounds.
- A description of the key components of Senate Bill 7 can be found in Appendix A. There are several other appendices, including those describing ERCOT, electricity complaints and utility unbundling.
- Deregulated Electricity in Texas includes charts and graphs that describe electric prices and complaint data. The charts also examine the effect of natural gas generation on the market, compare prices in regulated states versus deregulated states, and compare price increases among all states over time.

Executive Summary and Overview

On Jan. 1, 2002, precisely at the stroke of midnight, Texas broke with its long tradition of regulating most electric service. It was a colossal policy change. No longer would giant, vertically-integrated utilities maintain their monopoly grip on residential and business customers. No longer would Austin political appointees determine directly the price of air conditioning and lighting homes. Instead, new Retail Electric Providers (REPs) would vie for business in most parts of Texas. In theory, the free market and competition would keep a lid on rates. There would be more choices and better service.

These were the promises of electric deregulation.

Have electric prices improved? Is service better? And what about the bumps along the way? With the luxury of hindsight, what can we say about the policies that worked and those that have not?

Deregulated Electricity in Texas: A History of Retail Competition attempts to provide answers to these questions.

THIS REPORT EXAMINES THE FACTS THAT:

- Texans in deregulated areas have consistently paid more for power than Texans outside deregulation. All told, Texans living in deregulated areas would have saved more than \$22 billion dollars in lower residential electricity bills since 2002 had they paid the same average prices as Texans living outside deregulation.
- Average electricity prices in areas of Texas both inside and outside of deregulation have declined in recent years. For the first time in a decade, average prices in deregulated areas of Texas have dipped below the national average.

- After arguing for years against market intervention, some of the largest generators in the state have been lobbying hard for new mandates and subsidies. Generators have argued they need the extra money to help keep up with future demand, but base their arguments on faulty projections.
- The Texas Legislature has failed to act on important reforms, including some that would guard against market abuse.

KEY QUESTIONS RAISED IN DEREGULATED ELECTRICITY IN TEXAS:

- What's the right balance between system reliability and cost?
- What can be done to reduce confusion in the retail electricity market?
- What reforms would help guard the deregulated market against anti-competitive abuse?
- How can policymakers guard against waste and inefficiency at the organization that oversees the power grid?

Major Findings

Despite Recent Price Declines, Texans have Lost Ground During Deregulation Years

Although average electricity prices in Texas have declined since a peak in 2008, they nonetheless remain higher than average electric prices charged in most adjoining states. Relative to electricity prices nationwide, Texans also lost ground during the first 10 years of deregulation. For the 10 years prior to the law, Texans paid average residential prices 6.4 percent below the national average. In the 10 years after deregulation, Texans paid prices 8.5 percent above the national average.

Texans in Deregulated Areas have Consistently Paid More for Electricity

All told, Texans living in deregulated areas would have saved more than \$22 billion dollars in lower residential electricity bills since 2002 had they paid the same average prices as Texans living outside deregulation. The lost savings amounts to more than \$4,500 for a typical household since 2002.

Customer Complaints Trending Downward, but Still Remain Higher than Pre-Deregulation Levels

As the number of electric providers has increased, so has the complexity of electric contracts. The number of discrete billing charges also has grown. Complaints from electricity customers have been much greater during deregulation, as compared to those filed with the Public Utility Commission prior to deregulation. However, customer complaints filed at the Public Utility Commission have declined in recent years, and in 2013 fell to their lowest point so far under deregulation.

Market Power Abuse Remains a Concern

Although the Texas Legislature adopted a helpful reform in 2011, abuse in the wholesale power market remains a concern. Alleged abuses have contributed to the financial failure of at least one market participant. One major electric company profited by about \$4 million from alleged anti-competitive activities — even after paying a punitive settlement in the case.

Price To Beat Mechanism Failed to Protect Consumers

Deregulation-related charges known as stranded costs will add nearly \$7 billion to consumer bills. Texans will continue to pay these charges for years to come. In recent years generators have been lobbying for additional payments from consumers, in the form of capacity subsidies.

Renewable Energy Gains May be Tempered By Higher Costs for Consumers

Over the past 10 years Texas has become a leader in the development of wind power. However, the construction of transmission lines to serve West Texas wind generators will increase transmission costs for all Texans. The aggressive pursuit of wind power has created new reliability challenges.

The Power Grid Operator has Suffered Persistent Management Problems

The Electric Reliability Council of Texas (ERCOT), the operator of the power grid for most of the state, has a history of management problems. A major market overhaul overseen by ERCOT was completed years behind schedule and substantially above original cost estimates.

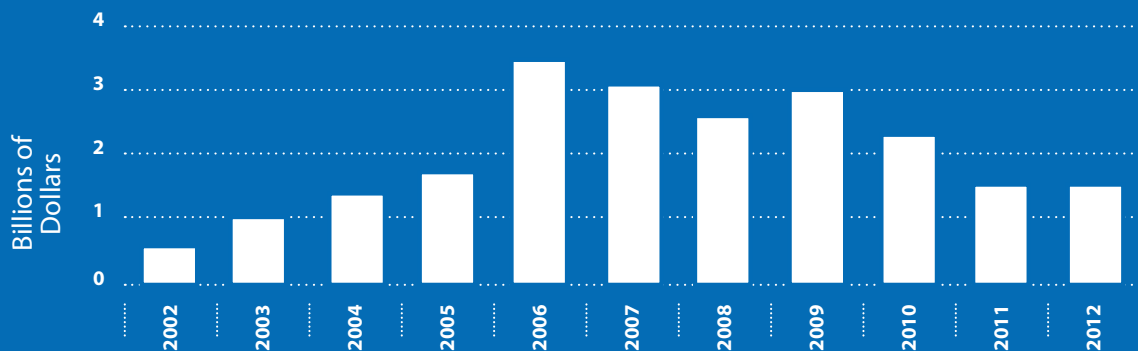
Transmission System Constraints Hamper Seamless Flow of Power

The transmission system in Texas was built to support the old monopoly system, not the dynamic deregulated market. As a result, moving power from parts of the state where power is plentiful to areas where it is needed most has remained a challenge in the state's deregulated market. Creating a transmission grid to accommodate the deregulated market will cost Texas consumers billions of dollars.

More than \$22 Billion in Lost Savings

This exhibit analyzes the most recent relevant pricing data from the U.S. Energy Information Administration, as of the time of publication. Only residential prices rates are examined.

Source: United States Energy Information Administration http://www.eia.doe.gov/cneaf/electricity/page/sales_revenue.xls



Average electric prices in Texas charged by deregulated providers have been consistently higher than average prices charged by providers exempt from deregulation. The exhibit above measures the potential impact of these higher prices. The bars illustrate the aggregate savings that would have accrued to Texans in deregulated areas had they instead paid the lower average rates charged in areas outside deregulation. The lost savings ranges from about a half billion dollars per year to more than \$3.5 billion. Providers exempt from deregulation include investor-owned utilities within Texas but outside the ERCOT region, municipally-owned utilities and electric cooperatives.

Recommendations

TCAP members are committed to making electric deregulation work. Affordable power in a fully competitive market means economic development for our communities and a better life for our citizens. But competition does not simply develop once regulation is abandoned. The Texas Coalition for Affordable Power proposes the following reforms to help transform the deregulated market in Texas into a truly competitive one.

Avoid Changes in the Market Structure that Will Increase Wholesale Costs

Policymakers should look for ways to stimulate growth in generation resources other than through price supports and subsidies that are inconsistent with the principles of competition and a free market. Policymakers should reject all proposals for “capacity markets” in which generators get paid even when they do not operate. This will only add to consumer bills.

Enhance Protections Against Anti-Competitive Activities in the Wholesale Market

Anti-competitive behavior should be prohibited in the wholesale energy market, and legal loopholes that exempt some generators from prosecution should be closed. The submission of “hockey stick bids” and anti-competitive practices prohibited in other states by the Federal Energy Regulatory Commission should be outlawed in Texas. Penalties for anti-competitive activities should be increased. When market power abuses occur, market participants harmed by such anti-competitive activities should be given the right to participate in investigations and enforcement actions undertaken by regulators.

Reform Voluntary Mitigation Plans

Under a Texas law, generation companies can protect themselves, in advance, against prosecution for anti-competitive behavior. Such protections are included in complicated regulatory documents known as “voluntary mitigation plans.” However, consumer groups have no voice in the regulatory proceedings that establish voluntary mitigation plans. This should change. Outside parties also should have the right to petition for the dissolution of a voluntary mitigation plan, should circumstances warrant.

Promote Standard Offer Deals

All retail electric providers operating in Texas should offer a standard fixed-rate product, with terms and conditions set by the Texas Public Utility Commission. The REPs would be free to set their own price for the standard-offer product. Standard Offer Products will help reduce confusion in the retail electricity market and allow for apples-to-apples comparison shopping.

Improve the PowertoChoose.com Website

The PowertoChoose.com website, which is designed to facilitate comparison shopping, should be as complete as possible. The Energy Facts Labels found on the website should include complaint data for retail electric providers that operate in Texas. A function that allows visitors to sort electricity offers based on company complaint data should be added. All retail electric providers should be required to promote powertochoose.com through a printed notice on home electricity bills.

Promote Time-of-Use Pricing

All retail electric providers should provide uniform information in bills, approved by the Public Utility Commission, explaining the benefits of reducing demand during peak periods. This information should include a link to the Commission's PowertoSaveTexas.org website.

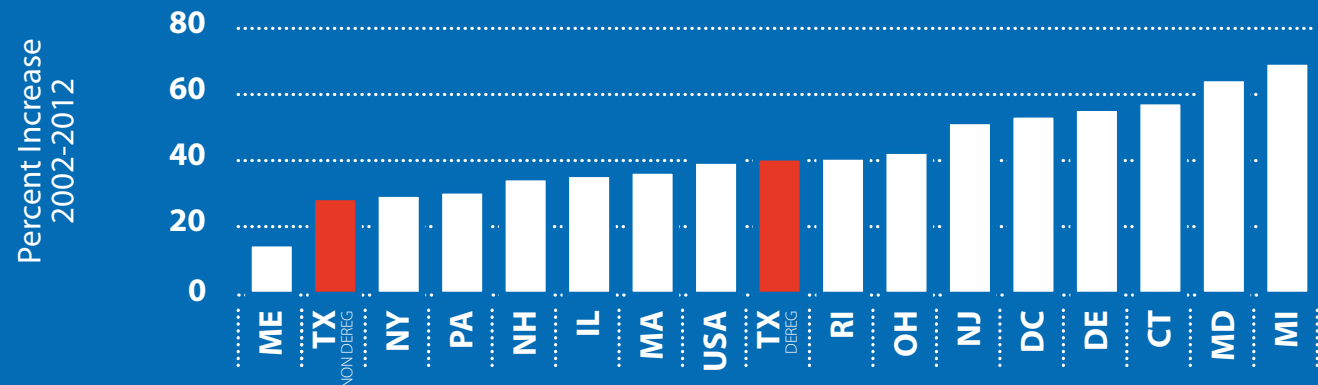
Re-regulation is Not the Answer

Policymakers should strive to make the state's deregulated electricity system as efficient and fair to Texas consumers as possible. Re-regulation is not the answer. Instead, the Public Utility Commission should pursue a balanced approach with regard to the state's electricity market. Consumer protection and affordability should have equal footing with the promotion of competition.

Residential Electricity Price Increases: 2002-2012

15 DEREGULATED STATES, INCLUDING DEREGULATED TEXAS

Source: United States Energy Information Administration http://www.eia.gov/cneaf/electricity/page/sales_revenue.xls



When it comes to price increases under deregulation, Texas fares better than 8 states and worse than 6. This exhibit compares changes in average residential price in deregulated areas of Texas with price changes in other deregulated states. The time period is 2002 through 2012. This exhibit uses 2002 as a starting point because 2002 was the year deregulation took effect in Texas. It ends with 2012 because that year was the most recent (at the time of publication) for which there was relevant data to conduct the analysis.

The Texas Coalition for Affordable Power

The cities and political subdivisions that comprise the Texas Coalition for Affordable Power include:



- Abilene
- Acton MUD
- Addison
- Alamo
- Alice
- Allen
- Alton
- Anna
- Aquilla Water Supply
- Aransas County MUD
- Aransas Pass
- Arlington
- Aubrey
- Austwell
- Bangs
- Beeville
- Bellmead
- Belton
- Benbrook
- Benbrook Library District
- Benbrook Water & Sewer Authority
- Bishop

- Brownwood
- Burkburnett
- Burleson
- Calhoun Port Authority
- Carrizo Springs
- Cedar Hill
- Celina
- Charlotte
- Cisco
- Cleburne
- Clute
- Clyde
- Colleyville
- Colorado City
- Comanche

- Commerce
- Copperas Cove
- Corinth
- Corpus Christi
- Corpus Christi Housing Authority
- Corpus Christi Regional Transportation Authority
- Crockett
- Decatur
- Denison
- DeSoto
- Dickinson
- Dilley
- Dublin
- Duncanville
- Eastland
- Edgecliff Village
- Edna
- Euless
- Everman
- Falfurrias
- Farmersville
- Flower Mound
- Forest Hill
- Fort Stockton
- Frisco
- Fulton
- Gainesville
- George West
- Godley
- Grand Prairie
- Grapevine
- Haltom City
- Hamilton
- Harker Heights
- Harlingen
- Harlingen Housing Authority
- Henrietta
- Highland Park
- Housing Authority of the City of McAllen
- Howe

- Hurst
- Ingleside
- Ingleside on the Bay
- Johnson County Special Utility District
- Kaufman
- Keller
- Kenedy
- Kennedale
- Kingsville
- La Feria
- La Marque
- Laguna Vista
- Lake Jackson
- Lancaster
- Lewisville
- Lorena
- Los Fresnos
- Lovelady
- Lyford
- Mansfield
- Manvel
- McAllen
- Mercedes
- Merkel
- Midlothian
- Mission
- Mission Housing Authority
- Missouri City
- Murphy
- North Richland Hills
- Oak Point
- Odem
- Odessa
- Orange Grove
- Ovilla
- Palestine
- Palmer
- Pantego
- Paris
- Pearland
- Plano
- Pleasonton
- Point Comfort
- Port Aransas
- Port Lavaca
- Portland
- Premont
- Prosper
- Red Oak
- Refugio
- Richland Hills
- Rio Grande City
- Roanoke
- Robinson
- Rockport
- Rockwall
- Rotan
- Rowlett
- Royce City
- Sachse
- Saginaw
- San Angelo
- San Juan
- Seadrift
- Sherman
- Sinton
- Snyder
- South Padre Island
- South Texas Water Authority
- Spring Valley Village
- Springtown
- Sugar Land
- Sunnyvale
- Sweetwater
- Taft
- The Colony
- Trophy Club
- University Park
- Upper Leon River MWD
- Venus
- Vernon
- Victoria
- Watauga
- Webster
- West Central Texas MWD
- White Settlement
- Whitney
- Wichita Falls
- Woodsboro
- Woodway
- Wylie

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<http://tcaptx.com/membership/member-list>

The Early Years

Electric deregulation — that is, the use of free-market principles to dictate prices — did not begin in Texas, nor did it arise in a vacuum. Rather, electric deregulation was a part of a larger nationwide trend that took hold during the 1970s and included the deregulation of railroads, airlines, telephone service and banks.

“With declining costs and the strong load growth in the State, it is likely that the commission could find itself facing a never-ending stream of rate cases in an attempt to harness utility over-earnings.”

— PUC report to the 76th Texas Legislature

Most of the nation’s electricity markets are governed by the Public Utility Holding Company Act, a Depression-era law that Congress adopted as a bulwark against anti-competitive behavior by power companies. Under that system, the states’ public service commissions — agencies like the Public Utility Commission (“PUC”) in Texas — design rates sufficient to cover the monopoly utility’s operating and investment costs, plus a reasonable level of profit.

The first meaningful change to the model came in 1978 with congressional passage of the Public Utility Regulatory Policies Act. Congress acted again in 1992 when it adopted the Energy Policy Act that led to the deregulation of wholesale markets. In 1995 lawmakers passed legislation deregulating the wholesale power market in Texas. The Federal Energy Regulatory Commission in 1996 also issued Order 888 requiring that utilities provide open access to their transmission lines to other power companies.

Together these changes opened the door to a new market system, one clamored for by big industrial users. Utilities had invested in costly nuclear and coal generation during the 1970s. Industrial users wanted to be free to buy cheaper

Postage Stamp Pricing

Different electric companies in Texas have for years maintained interconnected transmission systems, and these companies would sometimes use their interconnections to transfer power between one another for reliability reasons. In 1995 state lawmakers adopted legislation that also opened these interconnections to any power company wishing to trade wholesale power. This was an important step on the road to more complete deregulation that would follow.

But moving power across a transmission system is not free. Lawmakers understood that in order for competition in the wholesale market to work, power must be able to move freely across the state. Electricity transportation costs that varied by transmission company could hamper the ability of a generator to sell power to buyers throughout ERCOT. The 1995 legislation attempted to address this issue through a policy of “postage stamp pricing.” Postage stamp pricing means that, like the price of a stamp on a piece of mail, the price to transmit one megawatt of power is the same whether the power is sent across the state or to the next city.

Moving power from parts of the state where power is plentiful to areas where it is needed most has become a major problem in the deregulated market. The transmission system in Texas was built to support the old monopoly system, not the dynamic deregulated market. Without enough transmission capacity, power cannot flow smoothly in some areas. Transmission bottlenecks and system constraints lead to congestion costs that are ultimately passed on to retail customers.

power from other generating units, but that could only happen if they could extricate themselves from rate regulation. Industrial users also predicted that their economic and organizational clout would allow them to negotiate better deals under a deregulated system.

By 1996 Enron, the Houston-based energy company, also had begun aggressively advocating for deregulation.

Some economists perceived a potential benefit in electric deregulation, arguing that regulated utilities as monopoly providers lacked strong incentives to keep down costs and to pursue efficiencies in their operations. They argued that under the traditional regulated system, utilities had an economic incentive to build out their systems to the largest extent possible. They could then shift costs on to their captive ratepayers and, in the process, increase overall profits.

Others cautioned that technological and economic barriers unique to electric power make deregulating electric markets infeasible. Electricity — unlike most tradeable commodities — cannot be stored. This means that in a deregulated system, consumers are captive to volatile price swings. Because electricity is essential to the public welfare, dips in reliability or increases in prices can cause serious hardships, medical problems, or, in the most extreme cases, death.

CALIFORNIA DEREGULATES

California became the first state to move to deregulate its electric market when legislators there unanimously adopted Assembly Bill 1890 in August of 1996. AB 1890 had been pushed through the California legislature in just a few weeks at the urging of Enron, other power lobbyists and big business interests. Perhaps indicative of the increased attention on the California electric market, Gov. Pete Wilson and other major political players in the California deregulation effort took in about three times the amount of political donations from utilities that year than they had just two years earlier.

Problems appeared almost immediately. Enron and other new suppliers quickly realized that there was no profit in

serving residential customers and so stopped signing them up. Three months after the power market deregulated, the price for reserve power jumped from \$1 to \$2,500 per megawatt-hour. It then jumped to \$5,000, stayed there for three hours and then mysteriously dropped back to \$1. Four days later, it spiked again — this time to \$9,999. The price stayed there for four hours and then dropped to one penny.

“All of us saw those numbers and realized ... there was nothing to stop someone from bidding infinity,” said Jeffrey Tranen, then the chief executive for the California grid operator.

Meanwhile in Texas, Gov. George W. Bush wanted to proceed beyond wholesale deregulation. He unveiled an Enron-

The Senator and the Napkin Doodle

Even state Sen. David Sibley, the Waco Republican now remembered as one of the architects of the Texas law, saw that the proposed system could be manipulated.

During the plane ride back from an early fact-finding mission to California, Sen. Sibley began doodling out some ideas on a napkin.

“We got a napkin, and it looked like you could game the power exchange,” Sen. Sibley later told a reporter. “We had our (PUC) guy and our staff and people just started talking about how you could figure out how to withhold just enough electricity. We were just kind of toying with it, kind of war games things on the airplane”.

“Now, I’m a dentist,” Sen. Sibley said, “and if I could figure it out, it seemed like someone else could, too.”

supported bill in 1997 that would deregulate the Texas retail electric market. But big utilities like Texas Utilities Co. (later TXU) questioned whether the “Texas Consumer Power Act” would allow them to receive payments for investments they said would become uneconomical under the new system. Gov. Bush and Lt. Gov. Bob Bullock brokered a compromise that appeased the utilities, but the effort fell short, and the bill died in committee.

Texas lawmakers continued studying the issue during the 1998 interim with a seven-member Senate committee going so far as to fly to England to examine that country’s deregulation efforts. During this period, Enron, industrial users and Gov. Bush shored up political support for electric deregulation.

New Hampshire, Rhode Island and Pennsylvania also had begun implementing retail deregulation in 1997.

UTILITY OVEREARNINGS

By 1999, the PUC, under then-Chairman Pat Wood, openly acknowledged that the rates charged by utilities were too high. In its Scope of Competition report, the PUC made clear that selling electricity in Texas was a declining-cost

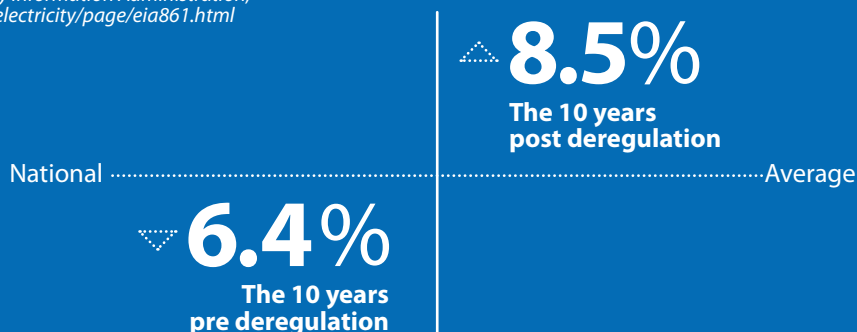
industry: “With declining costs and the strong load growth in the State, it is likely that the commission could find itself facing a never-ending stream of rate cases in an attempt to harness utility over-earnings.”

This meant that by 1999 utilities in Houston, Dallas and elsewhere were charging regulated rates that the PUC realized were producing profits in excess of what the commission had previously found reasonable. But instead of initiating proceedings to lower regulated rates, the PUC allowed the companies to continue charging the same amounts. The commission reasoned that in the event that the Legislature moved to deregulation, the utilities would demand certain payments for so-called “stranded investments” in such things like nuclear power plants that could become uneconomical in the new market. Under the commission’s reasoning, extra revenue from the inflated regulated rates could be applied to accelerate debt payments on the stranded investments.

These PUC-sanctioned over-earnings by utilities were intended to help facilitate the transition to deregulation. Instead, they became a contentious point during the upcoming legislative session when deregulation supporters began promising savings.

Texas Electricity Prices Before and After Deregulation

*Year to Date, Through June 2012
Source: United States Energy Information Administration,
<http://www.eia.gov/cneaf/electricity/page/eia861.html>



For the 10 years prior to the adoption of Senate Bill 7, Texans paid average residential electric prices that were 6.4 percent below the national average. In the most recent 10 years under the Texas electric deregulation law (through June 2012), Texans paid average rates that were 8.5 percent above the national average.

Year: 1999 The 76th Texas Legislature - Senate Bill 7 Becomes Law

On Jan. 20, 1999, during a packed press conference in a room just outside the Senate chambers, state Sen. David Sibley laid out his plan to deregulate the Texas electric market. The 76th legislative session was just getting under way. Sibley, co-sponsor of Senate Bill 7, would become a leading force behind the legislation that would fundamentally change how electricity is bought and sold in Texas. Sen. Sibley was clear in his intention.

“We want this bill to bring down the cost of electricity for all Texans,” he said. Building on that goal, Sen. Sibley later added that “if we don’t get consumers lower rates, then we have been a failure — I’ll be the first to say it.” The Waco Republican also pledged his law “would benefit virtually everyone living within our state’s borders.”

own deregulation law first, Texas could avoid coming under federal jurisdiction, according to the proponents.

Eventually Rep. Wolens and Sen. Sibley merged their ideas into a single piece of legislation, approximately 200 pages long. Enron was a big supporter of the legislation, as were traditional electric companies. Consumer groups, however, expressed skepticism.

“I think it’s the industry people who are pushing it, trying to create this kind of frenzy so that legislators feel like they have to act,” said Consumers Union analyst Janee Briesemeister. “They’re trying to create urgency by putting ads on television, trying to tell people what they want, even though people don’t know they want it,” she said.

A few lawmakers also urged caution.

“I don’t see the great public necessity for what we’re doing,” said one East Texas lawmaker. “Texas has some of the lowest rates in the nation. We have some of the best reliability in the nation ... And obviously, we don’t know what this will do.”

On March 8 a Senate committee adopted the legislation unanimously. On March 17 the full Senate gave its approval. Wolens’ House committee signed off on the bill on May 12th and then it was adopted by the full House on May 21. Gov. Bush signed Senate Bill 7 on June 18 proclaiming that “competition in the electric industry will benefit Texans by reducing monthly rates.”

SB 7 resulted in some of the most significant changes to the state’s electricity market in history. It included more than a half dozen major provisions, including a wide expansion of wholesale electric deregulation, the first-ever authorization for competition among retail electric providers, new renewable energy mandates and a green light for utilities to seek billions of dollars in “stranded costs” payments. All of this had the potential to dramatically impact the consumer pocketbook. (Read a more complete description of Senate Bill 7 in Appendix A.)

Unions and environmental groups for the most part supported the law. Most major consumer advocacy or-

In announcing the landmark legislation, the governor underscored its purpose: ‘Competition in the electric industry will benefit Texans by reducing monthly rates.’

Rep. Steve Wolens, champion of deregulation in the Texas House, acknowledged that while Texans already enjoyed relatively low electric rates, they spent more money on electricity than the national average. Never mind that the main reason for these bigger bills was not a flawed market design but rather Texans’ reliance on air-conditioning to battle the state’s famous summer heat — a fact no amount of electric deregulation could change.

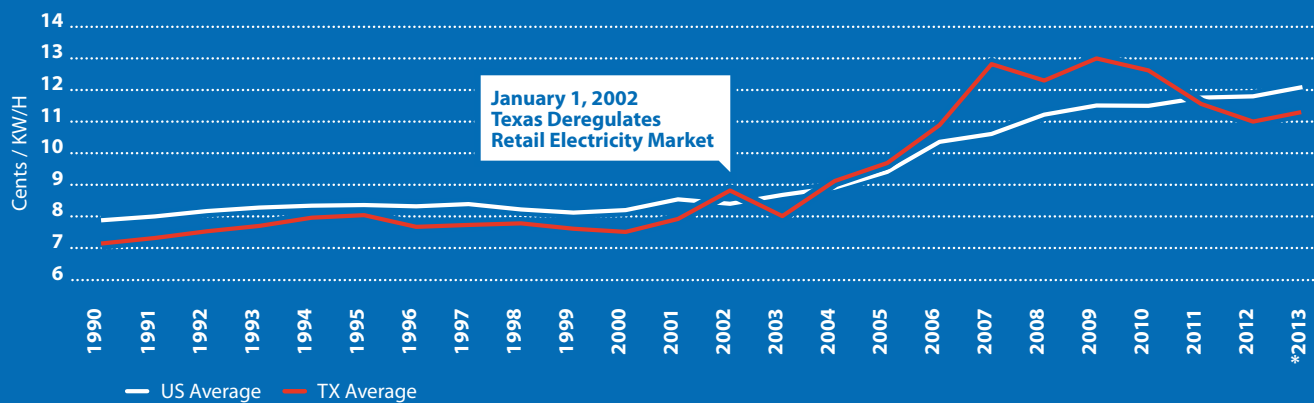
“Lower electric rates will help Texas companies compete in the international marketplace, make more household money available for spending on non-energy goods and services and bring new investments into Texas,” Wolens said.

Deregulation proponents also predicted (incorrectly as it turned out) that the federal government could soon require retail deregulation nationwide. By adopting its

Average Residential Electricity Prices Texas and United States 1990-2013*

*2013 data is Year to Date, Through September

Source: United States Energy Information Administration http://www.eia.doe.gov/cneaf/electricity/page/sales_revenue.xls



For years, Texans enjoyed electricity prices below the national average. After the Texas electric market deregulated, prices increased above the national average and remained significantly above that mark for many years.

Note that this chart shows average residential rates in Texas spiking above the national average in 2001. Industry-sponsored studies typically compare the 2001 spike with later years to support their contention that under Senate Bill 7, electric prices in Texas did not substantially increase relative to the rest of the nation. However, these industry studies ignore the clear trend — illustrated in this chart — that shows that Texans consistently paid below the national average before deregulation, and above the national average for many years afterwards.

Also note that the 2001 price spike, in itself, is a function of deregulation. The Texas Public Utility Commission allowed utilities in 2001 to collect from ratepayers excess earnings and high fuel surcharges as a down payment on later collections that were anticipated from the restructuring law. Average residential prices in Texas dropped after the market opened in 2002 because the fuel surcharges expired and because Senate Bill 7 mandated a 6 percent cut in base rates.

Prices then increased above the national average and did not dip back below it until 2011. Keep in mind that this exhibit examines state wide electric prices in Texas — both inside and outside deregulated areas. Average residential prices in deregulated areas dip below the national average in 2012. (See chart on P26)

ganizations opposed it or eyed it with deep skepticism. A large majority of Texans said they were satisfied with the current regulated system, which for more than a decade had resulted in rates below the national average.

In fact, most Texans in 1999 were probably unaware that electric deregulation was underway, or even contemplated. And yet with the passage of SB 7, electric deregulation is what they would get. (For summary of SB 7 see Appendix A).

Year: 2000 The California Crisis and the Texas Experience

The turn of the century also marked the beginning of California's energy crisis, brought on by the implementation of that state's deregulation law. Wholesale prices surged to unprecedented levels and some consumer bills increased three-fold. California's largest utilities were brought to the brink of financial ruin. The state suffered rolling blackouts because power was unavailable or overscheduled.

California had removed price controls in the wholesale market, but left them on retail rates. That pinched the utility companies. Adding to the woes was a spike in natural gas prices, a drought in the Northwest that reduced hydropower and — as was revealed later — price manipulation by Enron traders. "Every possible thing that could go wrong has happened," said Michael Worms, an energy-industry analyst with Gerard Klauer Mattison in New York.

But unlike other states that began cautiously pumping the brakes on deregulation in the face of the unfolding disaster in California, Texas continued forward with its plans. "We don't foresee going back and working and doing any changes," said state Rep. Steve Wolens, during a legislative hearing on Aug. 22, 2000.

Wholesale prices surged to unprecedented levels, and some consumer bills increased three-fold.

Rep. Wolens and state Sen. David Sibley rightly pointed out that their law differed in many respects from the Golden State legislation. They noted, for instance, that electric retailers in Texas had greater incentives to enter into long-term contracts. By entering into long-term contracts, retailers could more easily avoid the price spikes that can accompany seasonal increases in electricity demand. They also noted that Texas enjoyed healthy power reserves and that this extra generating capacity should help keep wholesale prices down.

STRANDED COSTS: CUSTOMERS OWE NOTHING?

In September 2000, an administrative law judge ruled that instead of owing \$2.8 billion to TXU Electric for its stranded costs, that ratepayers instead may be due \$1.45 billion in credits. The judge ruled that TXU ignored PUC instructions when it made its calculations.

TXU immediately blasted this preliminary ruling, claiming that it "robbed" the company of due process. "Our stranded costs are \$2.8 billion, and we have the right to prove it," utility spokesman Christopher K. Schein said.

Stranded costs, remember, represent the value of expenditures made by utilities in a regulated environment that would be recoverable from ratepayers over time under regulation but which might be unrecoverable in a competitive environment. The theory is that if generation assets become uneconomical burdens under deregulation, then ratepayers owe utilities the lost value of those assets.

Stranded costs are calculated by considering the difference under deregulation between the book value of a utility's generation assets like coal, lignite and nuclear generation plants and the market value of those assets. While the book value remains relatively constant (changing annually with depreciation accounting entries) during the transition to deregulation, market value changes daily. The calculation of market value is tied to natural gas commodity prices, which can directly impact the value of a utility's entire generation fleet.

To understand the judge's ruling, consider that when natural gas commodity prices are low — as they were in the years preceding deregulation — the cost to generate power using natural gas plants is also low compared to plants that use coal, lignite or nuclear fuel. That means that low natural gas commodity prices would tend to make a utility's standard fleet of coal, lignite and nuclear plants relatively less valuable in the market — and therefore increase the value of the utility's stranded costs.

“The Worst They’d Seen in 30 Years”

The California power crisis of 2000 was so profound that it put a quick end to the nationwide trend toward utility deregulation and even prompted many states that had passed deregulation laws to change course.

Wholesale electricity prices in California surged to unprecedented levels. Consumer electricity prices went up as well — in some instances by 300 percent. The state suffered rolling blackouts because power was unavailable or overscheduled. The deregulation disaster threatened the state’s then-booming economy and nearly sank its biggest utilities. Said Paul Patterson, an analyst at Credit Suisse First Boston in New York: “No one wants to hold stock in a company that is subsidizing its customers — if PG&E has to swallow this loss, investors will run in droves.”

The crisis also led the state’s Independent System Operator — California’s version of ERCOT — to declare “energy emergencies” on an almost daily basis. But supplies continued to dwindle. Near the end of the year the system operator declared an unprecedented Stage 3 alert, a signal that power reserves were so low as to be almost non-existent. “Operators here in the control room were saying this was the worst they’d seen in 30 years in the utilities business,” said Stephanie McCorkle, a spokeswoman for the organization.

Only by frantically pushing through power from other states at the last minute could the grid operator dodge system-wide blackouts.

By contrast, when natural gas commodity prices go up, plants that use coal, lignite and nuclear fuel become more attractive, and their market value increases. That would tend to decrease stranded costs or — theoretically — create negative stranded costs. Rather than owing billions of dollars to utilities for uneconomical plants, ratepayers instead may be owed billions of dollars in refunds for having helped finance lucrative generating plants that now put the incumbent utilities at an economic advantage in the deregulated market.

Generally speaking, this was the assessment of the administrative law judge when she ruled against TXU in the September case. The PUC staff likewise suggested the total value of some utilities’ stranded costs may have become negative. “The increases in the cost of natural gas over the past year have resulted in revised stranded cost projections that for most utilities are much lower or negative amounts, based on the commission model,” the agency noted in its 2001 Scope of Competition report. “Since the commission first estimated stranded costs, the magnitude of total stranded investment has been reduced—and, in fact, may have become negative.”

Of course, the mere suggestion of negative stranded cost refunds caused a ripple through the entire industry. Senate Bill 7 “only recognizes positive stranded costs,” said TXU spokesman Schein, echoing the prevailing industry sentiment among incumbent utilities. This policy divide — how to calculate stranded costs and whether ratepayers could receive credits if calculations produced a negative result—would foreshadow one of the bitterest regulatory fights of the decade.

Year: 2001 The 77th Texas Legislature — Saying No To Ratepayer Refunds

APPREHENSION ABOUT DEREGULATION

Lawmakers should apply the brakes: with the crisis in the news daily, that's what Texans were telling pollsters in 2001. More than 40 percent of respondents to a Scripps Howard survey said deregulation should be put on hold, and another 13 percent said plans to deregulate should be scrapped altogether; three-fourths of those surveyed said they were satisfied with the regulated electric system already in place. There had never been a public groundswell in the first place — it was a market change pushed by and for big business — and now the public was calling for lawmakers to reconsider it. But the move toward deregulation in Texas continued undeterred.

During the 77th Texas Legislature, lawmakers rejected two measures that could have added significant consumer protections to SB 7.

The first of those consumer-friendly bills, House Bill 918 by state Rep. Sylvester Turner, would have allowed regulators to extend price limits on residential electricity, put limits on wholesale electric prices and suspend a number of deregulation-related collections from ratepayers. Also, importantly, HB 918 would have given regulators more authority to delay the Jan. 1, 2002 market opening. Industry representatives warned against tampering with Senate Bill 7, and the legislation died in House committee.

In February, Rep. Turner filed House Bill 2107. This bill addressed the issue of so-called "negative" stranded costs — that is, the ratepayer refunds that can theoretically result when market value exceeds book value of generation assets. Under some estimates, HB 2107 could have resulted in nearly \$7 billion in customer refunds, or more

than \$300 for every man, woman and child living in Texas — an astronomical amount.

The utilities argued that SB 7 never contemplated negative stranded costs, and that such refunds were out of order. Tom Baker, then president of TXU Electric, said all those billions of dollars in potential refunds belonged to the company's investors, not the ratepayers who funded the construction of the plants through the rates they paid — and that taking the money away from the company would constitute an illegal confiscation. "No legal or business model would support such a confiscation," he said.

But the Public Utility Commission, in a report issued shortly before the legislative session, said the question of negative stranded costs was an open one. Chairman Pat Wood III, an architect of the deregulation law, said making utilities pay for their over-earnings "would be the fix that will make this whole thing work because, otherwise, you've got money that would make the market work going to the owners of the generators." Chairman Wood said SB 7 left open the question of whether consumers can be awarded negative stranded costs and that Rep. Turner's bill would clarify that issue.

...in April, ERCOT officials received a confidential internal report warning that their systems were in disarray...it added, presciently, that ERCOT's upgrade project would go over-budget. It noted that ERCOT had failed to meet numerous project goals...

It was a wild ride for HB 2107. It made it through the House committee, just barely, and then improbably onto the floor of the House, where it won passage. But it was killed in early May before it could be considered by the full Senate. The coup de grace was a parliamentary move by state Sen. Tom Haywood. A spokesman for Sen. Haywood said that by killing the bill the senator was doing consumers a favor.

Responded one consumer advocate: “How is it bad for consumers to get their own money back? When consumers overpay, decent responsible businesses usually give the money back.” (For more about stranded costs and related issues, see page 66 and Appendix C).

PROBLEMS AT ERCOT

In preparation for the new deregulated market, ERCOT, the operator of the Texas power grid, had consolidated its six regional centers into a single control facility near Austin. In addition to ensuring the power grid had exactly enough power moving across its lines to meet demand and prevent blackouts, ERCOT also assumed responsibility for overseeing a six-month deregulation pilot project to give its engineers an opportunity to test new computer systems. During the trial period, new retail electric providers could compete for up to 5 percent of the market. As it would be under full deregulation, ERCOT was responsible for transferring customers between companies participating in the pilot project.

On Feb. 15, 2001—exactly on schedule—the PUC allowed new electric providers to begin signing up customers for the pilot project. Businesses began receiving information about the project in electricity bills that went out in February. Residential customers received information a month later. Service in the trial market was to begin in June. “The time is right,” said Jeannie Verkinnes, marketing manager for Shell Energy.

ERCOT had spent months upgrading its systems in preparation for the pilot project. But in April officials there received a confidential internal report warning that their systems were in disarray. The report called for a host of last-minute changes. “Many of the changes identified ARE critical, and there is already a significant amount of risk in the marketplace,” the April report stated. It added, presciently, that ERCOT’s upgrade project would go over-budget. It noted that ERCOT had failed to meet numerous project goals and that ERCOT employees and contract workers required better management. But instead of discussing the report with the auditors, ERCOT officials got sidetracked and filed the report away.

Two months after the first report, ERCOT received another internal draft report. It stated that the new system setup for deregulation “remains at high risk for (technical) and marketplace failures” and that “major delays were a result of systems that were not tested and/or ready.” Like the previous report, it was authored by technical experts hired by ERCOT and was intended to guide the organization in its decisions as it prepared to handle customer switches once the market opened in January 2002. At the time of their release, very few people outside of ERCOT knew of either report’s existence.

As a result of its incorrect projections, the price of wholesale power appeared to spike to \$15,000 per megawatt-hour when the cost was actually closer to \$1.

Problems began to emerge even before the pilot project was underway. Power companies sent switch requests to ERCOT, but ERCOT’s new computer systems couldn’t handle them. So instead ERCOT officials turned to less technically sophisticated “work-arounds”—that is, they used emails and phone calls to process the switch requests. Customer switching was supposed to have begun by June, but problems at ERCOT led to repeated delays. “There is a risk to the marketplace ... this performance is unacceptable,” PUC commissioner Brett Perlman told ERCOT leaders. He also said he had been regaled with complaints about giant billing errors generated by the organization. Industry insiders expressed alarm.

The pilot project got underway on July 31st—two months behind schedule. But even after delaying the pilot project three times, ERCOT still could not get its systems to work correctly. The organization had managed to get a computer center up and running on schedule but then could manage only to switch service for a handful of the 80,000 residential customers who signed up under the pilot project. ERCOT said the new system would be able

to handle 20,000 switches daily once they got it to work properly. But during the pilot project it was almost wholly incapable of managing any customer switches at all.

ERCOT's computer problems were harming not only residential customers and companies seeking to serve those customers — but companies not even participating in deregulation. Austin Energy, a municipally-owned utility outside the state's deregulated area, reported multi-million dollar errors on ERCOT-generated bills. "At the time of this filing, Austin Energy has not yet received a single accurate settlement," wrote Bob Kahn, Austin Energy vice president. "In fact, the statements we received contain gross allocation and calculation errors. In one case, Austin Energy received a statement for \$90 million ... when in fact it owed nothing."

On July 31, the pilot project officially got under way. It had been delayed three times, was two months behind schedule and was immediately beset by problems.

An official at another municipally owned utility complained of "bigger than big" errors — errors so colossal that they could drive the utility to bankruptcy.

ERCOT also drafted a budget that year that it kept almost entirely secret. It outlined its spending plans for 2002, the first full year of deregulation, and noted that spending would nearly double from the levels experienced in the previous few years. But other than that, details were scarce. "There is no accountability on the spending at ERCOT," Janee Briesemeister of Consumers Union said. "They adopt their budget in secret ... and the budget results in a fee on every consumer electric bill."

PRICE SPIKES IN THE WHOLESALE MARKET

Also in 2001, prices in the wholesale market began spiking. The magnitude of the price spikes — 100 times typical price levels — were similar to spikes seen during the California crisis. The first occurred on July 31, the very first day of the pilot project, when power that had been selling for between \$10 and \$45 per megawatt-hour suddenly shot

up to \$1,000 per megawatt-hour. That price doubtlessly would have increased even more if not for caps established by the PUC to guard against the price-gouging witnessed in California.

ERCOT officials blamed the first spike on an anomaly. "I don't think people are going to do it again," said Tom Noel, chief executive officer of ERCOT, referring to a supposed one-time mistake by power generators. But then on Aug. 5 the market experienced more price spikes. In this new case, the power surged to 1,000 times its regular price. The prices could go no higher because of the regulatory cap. On Aug. 8 wholesale prices spiked again — from a relatively typical level of less than \$60 per megawatt-hour for balancing energy to \$999. An hour later, the balancing energy price skyrocketed to \$10,000 — but was adjusted downwards to \$1,000 because of the price caps.

Although the spikes impacted a relatively small segment of the wholesale market called the "Balancing Energy Market," they signaled big trouble. This is because the overall cost of power in the wholesale market — even the price of power in so-called longer-term bilateral contracts — parallels these spiking prices set in the smaller spot market. Also, under the ERCOT-managed spot market, the cost of the highest acceptable bid for power dictates the price to all successful bidders. For example, ERCOT might receive scores of bids ranging from \$50 per megawatt-hour to \$1,000 per megawatt-hour. If the grid operator needs 100 percent of that power to meet demand, then all bidders get the top price, or \$1,000 per megawatt-hour — even those who submit bids offering to accept payment of \$50 per megawatt-hour.

The price spikes experienced during the first week of the pilot project would prove pernicious, a problem that would plague the deregulated market for years. The spikes spurred regulatory investigations, lawsuits and bankruptcies. Underscoring the gravity of the situation and the uncertainty regarding appropriate controls, Danielle Jaussaud, the PUC's director of economic analysis, warned: "We don't know if the market is going to work — we don't know how well these rules are going to perform. ... People ought to be concerned."

Other warnings appeared in various reports to the PUC, ERCOT or in the comments of policy makers. One expert told the PUC in 2001 that under the Texas system, short-falls could give electric companies "perverse incentives"

The Balancing Energy Market

The state's wholesale spot market, when it was known as the "Balancing Energy Market," established real-time prices at regular intervals, 24 hours a day. Through this market, ERCOT technicians ensured the continuous "balancing" of production and consumption of energy on the grid — hence the market's name.

Under ERCOT rules, generators bid power into the balancing market and then the highest-cost bid for required energy set the price for all other accepted bids. This meant that generators that produced relatively cheap coal-fired or wind energy still received payments as if they were producing more expensive power from natural gas-fired plants. These prices eventually got passed onto consumers. Said another way, under Senate Bill 7, the economic benefit of producing cheap electricity mostly has ended up in the pockets of generators as extra profits, not in the pockets of consumers as savings. This differs from a regulated cost-based system, whereby wholesale prices are linked more directly to the cost of production.

Balancing energy historically has comprised less than 10 percent of the energy bought and sold in the state's deregulated wholesale market, and yet it has been crucial in setting wholesale electricity prices overall. To the extent that balancing energy prices were higher than market conditions warranted, then it was a good bet that wholesale power prices overall also were too high.

Before Senate Bill 7, if a utility obtained power from both low-cost and high-cost generators, then the utility's rates reflected that mix of low-cost and high-cost power. But in the Balancing Energy Market — and indeed, in the restructured wholesale energy market overall — the direct link between energy prices and the cost of producing energy was severed.

In 2010 ERCOT replaced the Balancing Energy Market with a "Nodal" market (see page 53 for more details about the nodal market). However, many of the pricing principles of the Balancing Energy Market remain.

to inflate prices. Another expert warned that some of the underlying premises behind Texas deregulation could be incorrect. Industry backers of Texas deregulation were blaming California's problems on a lack of generation capacity, but Harvard expert William W. Hogan and University of California-Berkeley expert Shmuel S. Oren told the PUC that more complicated factors in California that also impacted Texas were at play. In 2001, both Hogan and Oren forecasted possible price spikes, bureaucratic headaches and anti-competitive price inflation.

SYSTEM RELIABILITY IS TESTED

Errors by ERCOT — an organization that literally has "reliability" as one of its middle names — also nearly caused blackouts during the pilot project. On the third, fourth and fifth day of the project, the organization grossly miscalculated the state's energy needs. As a result of its incorrect projections, the price of wholesale power appeared to spike to \$15,000 per megawatt-hour when the cost was actually closer to \$1. Grid operators went scrambling for the phones, frantically imploring power generators to ignore the erroneous computer data and ramp down production.

ERCOT officials attributed the miscalculations to human error and not to any defect in the market itself. No market participant actually paid the misstated prices.

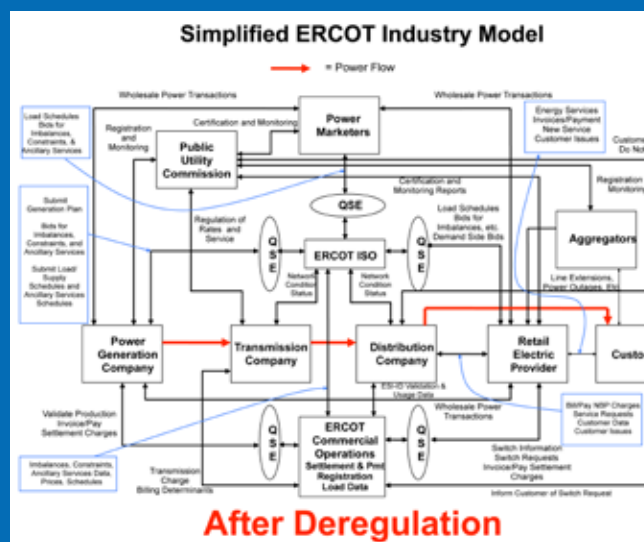
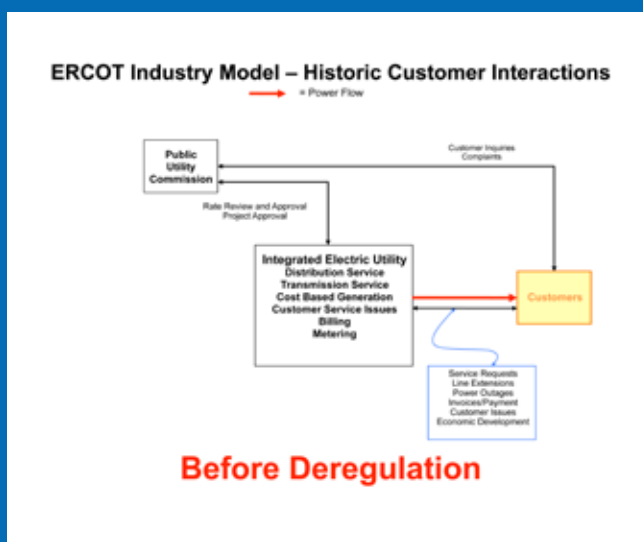
ERCOT blamed the next meltdown — on Aug. 9 — on a computer failure. It said an unknown problem shut down part of the wholesale market for four hours, a malfunction that was serious enough that officials had to make another round of urgent phone calls to generators to prevent blackouts.

The pilot project was supposed to have given ERCOT an opportunity to test its systems, and give Texas a moment to take a deep breath before beginning the big show on Jan. 1. But as one consumer advocate wryly quipped: "They (ERCOT officials) don't appear to be ready to play with live ammo." Industry insiders began raising concerns about the readiness of ERCOT to handle the market going live in January. Many would-be residential customers, commercial customers and other market participants echoed those concerns.

Sam Jones, the chief operating officer at ERCOT, said the problem was with the transmission system itself. He attributed the price spikes experienced during the pilot

New Market, New Complications

Source: ReSolved Energy Consulting



Sam Jones, then the chief operating officer for ERCOT, said in 2002 that “in exchange for an ability to shop around and get savings, (customers must allow) for a process that is more complicated than it used to be.” The charts above illustrate graphically the complexity of the deregulated market in Texas. Under the previous system, electricity provided by the bundled utility flowed directly to the end-use customer. Under the Texas deregulated system, a much larger number of interconnected entities play a role in getting power to customers.

project to the lack of power lines: “We have a south-north constraint on the system, and people are trying to move a lot of power to the north — and it’s driving prices up.”

Regulators had known for years that the lack of transmission could stymie deregulation. The wires system was never built to move power across vast regions of the state — a vital necessity if deregulation was going to efficiently lower wholesale power prices. Jones explained that without enough transmission, there would always be bottlenecks — especially during times of high demand, like during hot summer days. Because of the bottlenecks, also called “congestion constraints,” the cheapest power sometimes cannot get moved to parts of the state where it’s needed most. And because electricity cannot be stored, power companies cannot keep cheap electricity in reserve.

STRANDED COSTS ARE SETTLED FOR TXU CUSTOMERS

One other highlight in 2001 bears note: an agreement reached late in the year between TXU and a coalition of cities, consumer groups and other market participants that is still seen today as one of the most far-reaching regulatory settlements in Texas history. Under the deal, TXU agreed to surrender billions of dollars in claims for “stranded” costs.

“I cannot think of a single case in Texas regulatory history that has been as comprehensive,” TXU spokesman Christopher Schein said. “It settles, resolves or eliminates a dozen different lawsuits. We’re looking at (an effect) going back as far as the Comanche Peak deal (of the ‘80s) and going forward for a decade.”

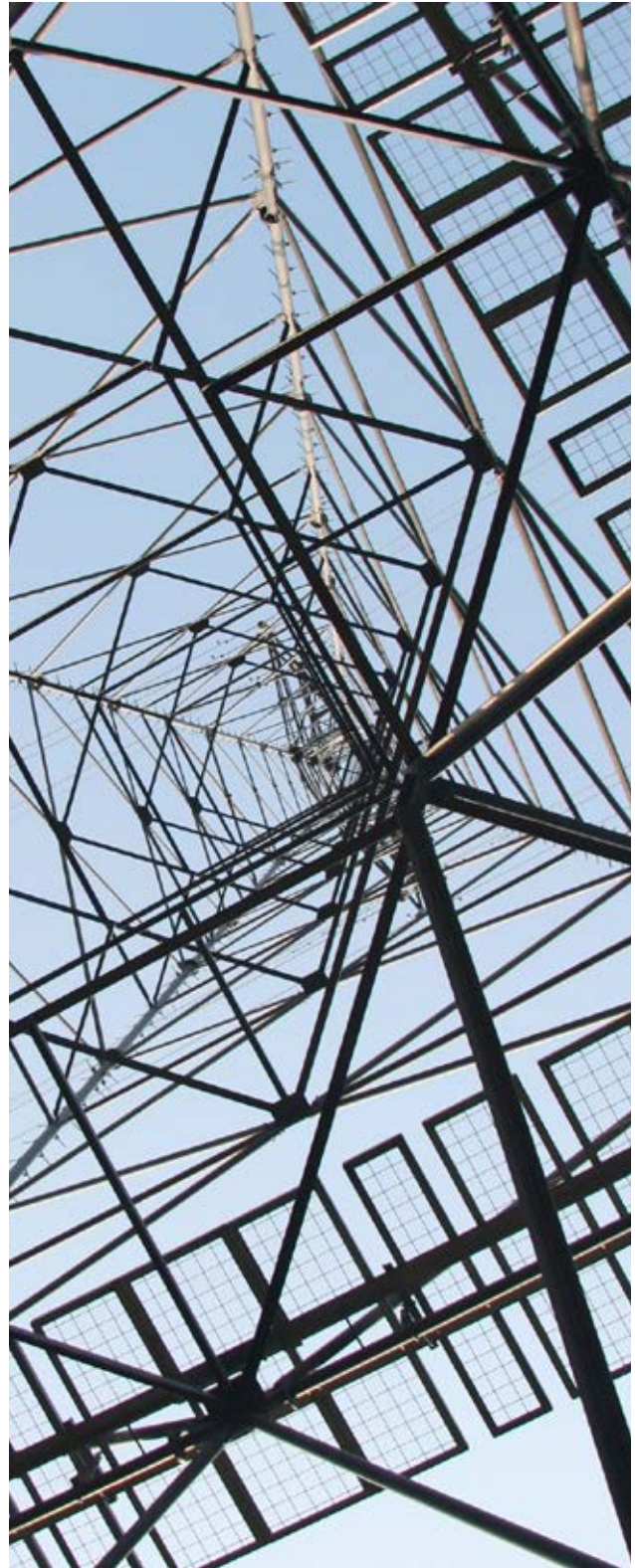
Under the terms of the deal, TXU would relinquish its claim on reimbursements for stranded investments — that is, those investments like nuclear power plants that utilities claim would become uneconomic under deregulation. SB 7 allowed companies like TXU to seek ratepayer reimbursements for such stranded investments. TXU at one time said it was owed more than \$6 billion.

The deal in 2001 recalculated the value of TXU's stranded costs to zero. TXU also agreed to surrender claim on about \$350 million in fuel related charges. In exchange, consumer groups agreed to lift their objections to a bond-financing technique known as securitization that allowed the company to get up-front payment for over \$1 billion in ratepayer obligations. The PUC, with the support of consumer groups, had objected to the company's securitization claim, and prior to the settlement, the issue had been tied up in court.

...shortfalls could give electric companies 'perverse incentives' to inflate prices.

The settlement is now seen as an extremely significant consumer victory because companies other than TXU have subsequently argued successfully for billions of dollars in stranded costs. Houston's CenterPoint Energy, for instance, was awarded \$4 billion — money that every customer of CenterPoint must pay for the next decade through surcharges on their transmission and distribution rates.

(For more information about stranded costs awards in Texas, see the chart on page 66).



The Enron Collapse

On Aug. 15, 2001, just months before the Texas market was set to open, Enron's chief executive Jeffrey Skilling unexpectedly announced his resignation. He had been in the CEO position only six months and by voluntarily resigning, he was surrendering what would have been a sizeable severance package. Predictably, the departure set off alarm bells on Wall Street. But Enron chairman Ken Lay, who announced he would resume his role as chief executive officer, told analysts to expect "no change in the performance or outlook of the company going forward." He said there was "absolutely no accounting issue" behind Skilling's departure — "no trading issue, no reserve issue, no previously unknown problem issues."

Skilling sold 450,000 shares of Enron stock worth at least \$33 million in the months before his departure. Enron stock surged in 2000 and for the early part of 2001 before dropping precipitously. By the time Skilling announced his resignation it was down nearly 50 percent for the year. In after-hours trading shortly before news of Skilling's departure was public, it fell again another 8 percent. The value of Enron's shares dropped another 10 percent during the first week of September, bringing it down 62 percent for 2001.

On Oct. 16 Enron posted a third-quarter loss of \$618 million, the result of what it said was \$1 billion in one-time charges for various businesses. Much of the losses were related to the poor performance of New Power, the complaint-maligned company set up to vie for retail business in deregulated markets. On Oct. 23, in a conference call to nervous investors, Lay insisted the company had sufficient cash on hand to keep from writing off additional investments.

By this point, analysts had begun asking questions about the company's labyrinthine business practices and financial reporting. The Securities and Exchange Commission initiated inquiries into transactions involving the company's chief financial officer, Andrew Fastow. Lay declined to provide details of those transactions during the conference call but nonetheless insisted that Enron board members "continue to have the highest faith and confidence in Andy." A day later, the board relieved Fastow of his duties.

Time was running out for the once giant energy trader. The company consistently avoided giving straight answers to investors' questions, Moody's Investor Services lowered Enron's credit rating and shares continued to nosedive. It was becoming unclear whether the company could even raise enough cash to maintain day-to-day operations.

On Nov. 8, rival Dynegy agreed to acquire Enron for about \$8 billion. It was a short-lived offer: after Enron's financial situation continued to deteriorate and more of Enron's questionable practices came to light, Dynegy pulled its offer. Once the world's largest energy trader and the seventh largest company in the country, Enron imploded. The company filed for bankruptcy on Dec. 2.

In a story marking the company's end, *The New York Times* noted that the company's "decade-long effort to persuade lawmakers to deregulate electricity markets had succeeded from California to New York." *The Times* pointed out that Enron pioneered large-scale energy trading, a practice that had existed for less than a decade before the company's demise.

The Times noted Enron's "ties to the Bush administration assured that its views would be heard in Washington." Enron, *The Times* noted, "dripped contempt for the regulators and consumer groups that stood between it and fully deregulated markets." Enron's end came just days before Texas went forward with the deregulation system the company had pioneered.

In August, not long before the collapse and just as Enron was attempting to open up electric transmission systems in the southeast, President Bush appointed former Public Utility Commission chairman Pat Wood III to chair the Federal Energy Regulatory Commission. Enron CEO Lay had recommended Wood for that post, just as Lay earlier had recommended Wood's appointment to the PUC. In June 2001, shortly before Enron went belly-up, Gov. Rick Perry appointed Max Yzaguirre, a former Enron executive, to chair the PUC.



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MAKE POWER A CHOICE

Year: 2002 The Market Opens

On Jan. 1, 2002, at precisely midnight, Texas opened its electricity markets to retail competition. Under the rules of Senate Bill 7, retail electric providers affiliated with the state's traditional utilities were required to charge 6 percent less than the regulated rates they charged prior to the start of competition. This became the "Price To Beat" — that is, the price that new competitors tried to beat with lower rates. By undercutting the Price To Beat, the new competitors could steal away customers from the legacy electric providers. In theory, competition between the new providers all fighting to undercut the Price To Beat would keep prices down.

That almost no residential customer paid a price other than the Price To Beat on the first day of deregulation was no surprise. Of course it would take time for customers to become comfortable with the deregulated market, investigate price offerings and make the switch. No one expected, however, that most customers would remain on the Price To Beat for years and years. The market remained "sticky," and customers remained cautious.

"In exchange for an ability to shop around and get savings, (customers must allow) for a process that is more complicated than it used to be..."

— ERCOT Chief Operating Officer Sam Jones

Deregulation's proponents claimed that Price To Beat customers were saving money. The enthusiasts pointed to the 6-percent cut, comparing the Price To Beat to the rates on Dec. 31, 2001 — the final day of the old regulated era. "The Price To Beat rates that we've established strike a good balance between immediate customer savings and attracting retail electric providers to enter our market and offer even greater savings and service innovations," said Max Yzaguirre, the Public Utility Commission chairman.

But there's another side to the story. Consider this: while state regulators put potential savings to residential cus-

tomers at more than \$900 million, their analysis included savings attributed to the expiration of an unnecessary and overstated surcharge relating to fuel costs. That surcharge would have expired even under the old regulated system (and the overcharges refunded to customers) and can't be attributed as customer savings from deregulation. In fact, when controlling for natural gas prices — as the state's Office of Public Utility Counsel (OPUC) did in one report — it becomes clear that customers ended up paying more for power on the first day of deregulation compared to regulated rates in place just prior the adoption of Senate Bill 7.

An example: a typical Dallas/Fort Worth Metroplex homeowner had paid about \$74.08 a month for electricity in January, 1999. By January 2002, even with the rate cuts required by SB 7, that customer would pay \$76.74, according to the OPUC analysis.

The new Price To Beat rules also included a provision for calculating changes in fuel costs that would continue to drive up prices. Under it, companies could increase the Price To Beat rate twice a year to cover increases in the cost of natural gas, which fuels many of their plants. But SB 7 — at least, as it was interpreted by the Texas Public Utility Commission — included no provision that would push the Price To Beat down in the event that natural gas prices decreased. As a consequence, the price paid by most Texans in the deregulated market went up, never down, for several years. If the price of natural gas increased, then the utilities increased Price To Beat rates. But if the natural gas price dropped, Price To Beat rates still remained high. Rather than aggressively undercutting Price To Beat rates that were already out of step with the market, competitive retail electric providers inexplicably clustered their prices around Price To Beat rates, which suggested a lack of healthy competition.

Another closely-related problem was that all adjustments made to the Price To Beat fuel factor were based entirely on changes in the price of natural gas. Generators use plenty of other fuel sources — including cheaper coal, lignite and nuclear generation — and the price of these fuels is much less volatile than natural gas. But lawmakers created SB 7 when natural gas prices were low and

based the legislation upon the incorrect assumption that natural gas prices would stay that way. However, natural gas prices climbed steadily upward for many years after the passage of SB 7, and the Price To Beat prices marched up right behind them.

On April 23, 2002, TXU filed for its first increase under this controversial natural gas-based Price To Beat fuel factor mechanism. The PUC approved that rate hike and others — up to 10 percent in some regions — within eight

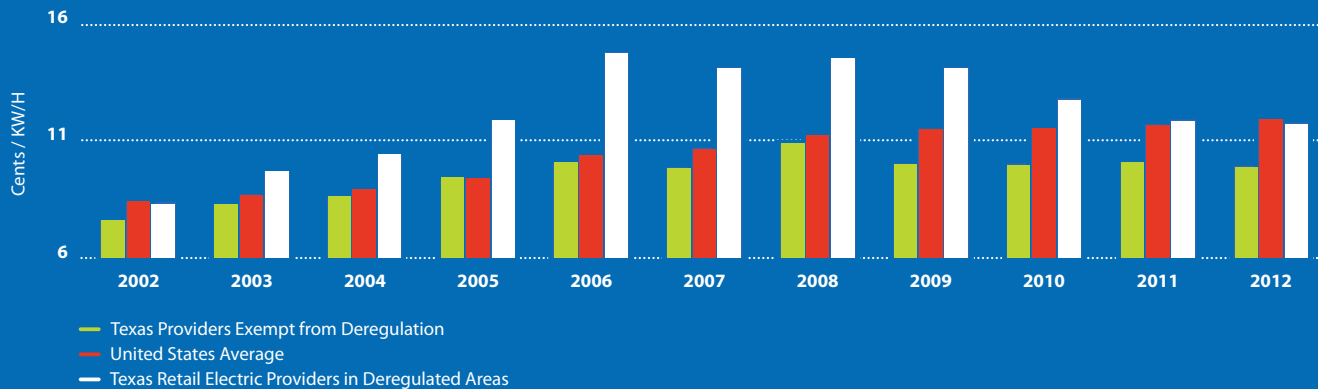
months of the market opening. A spokesman for the electric company said increasing the Price To Beat would foster deregulation because new retailers would have more room to undercut it and still make a profit. Consumer advocates were skeptical.

“You have to raise rates to lower rates?” asked a puzzled Carol Biedrzycki, director of the Texas Ratepayers’ Organization to Save Energy. “Competition was supposed to provide electricity at lower prices and with a higher level

Electricity Prices Higher Under Deregulation

AVERAGE RESIDENTIAL ELECTRICITY PRICES INSIDE AND OUTSIDE DEREGULATED AREAS OF TEXAS

(Providers exempt from competition include investor-owned utilities outside the ERCOT region, municipally-owned utilities and electric cooperatives.)
Source: United State Energy Information Administration <http://www.eia.doe.gov/cneaf/electricity/page/eia861.html>



Texans paid below-the-national-average electricity prices before the state deregulated its retail electricity market. But in 2002, the year that the deregulation law took effect, Texans in areas of the state participating in deregulation began paying above the national average, while Texans in areas exempted from deregulation continued paying below the national average.

Average residential rates in deregulated areas of Texas have been anywhere from 9 to 46 percent higher than average rates for areas of Texas outside deregulation. Moreover, average rates in deregulated areas of Texas have been generally higher than the nationwide average, while average rates in areas of Texas outside deregulation have been generally below the nationwide average. In 2012, for the first time in 10 years, average electricity prices in deregulated areas of Texas dipped below the nationwide average. The most recent relevant federal data available at the time of publication was used for this analysis.

of service. ... If we have to raise [rates] so a competitor can afford to operate in the market place ... [that] defeats the whole purpose of opening the market in the first place."

DELAYED SWITCH REQUESTS, LATE BILLS AND EXCESSIVE SPENDING

ERCOT officials began the year by making bold promises. Despite the clunker of a pilot project and wholesale prices that went haywire, ERCOT officials said the organization was now up to the task of managing the new market. Sam Jones, the system's chief operations officer, predicted that ERCOT would be able to switch about 41,000 residential and business customers each day in January. (Not that so many customers were choosing new providers. Rather, all customers in deregulated areas of ERCOT — even those who did not choose a competitive provider — had to get switched to the retail electric provider affiliated with the incumbent.)

ERCOT problems also prevented retail electric providers from delivering accurate and timely bills to their customers. Sometimes bills were delayed by ERCOT and were not sent to customers for several months. ERCOT ended up addressing many of the problems, but only by creating manual processes in the place of automated ones. The PUC predicted that fixing the problems would end up resulting in significant additional costs.

In April 2002, Public Utility Commissioner Brett Perlman said a multi-million dollar ad campaign designed to alert consumers to the new market should be put on hold. He warned that if the media blitz went forward as scheduled, a backlog of 100,000 switch requests could result. The campaign was to include a mass mailing of 5 million customer guides, as well as television advertising. Commissioner Perlman also complained that no one seemed willing to take responsibility for ERCOT's poor performance.

The ratepayer-financed organization's 266 employees earned an average of \$99,000 annually in salary and benefits, including fully paid health, vision and dental insurance. This compensation was well in excess of the state government employee average.

Also in 2002, the public got its first real glimpse of ERCOT's financial dealings — and what they saw was alarming: \$500,000 for marketing and advertising (even though the quasi-governmental organization had absolutely zero reason to advertise because it had no competitors); ratepayer money spent to send employees to baseball games and up to \$10,000 per ERCOT employee-authorized travel expenses. The ratepayer-financed organization also spent \$29,000 for a holiday party at a four-star hotel in Austin and \$18,500 on a sponsorship deal for a minor league hockey team. The ratepayer-financed organization's 266 employees earned an average of \$99,000 annually in salary and benefits, including fully paid health, vision and dental insurance. This compensation was well in excess of the state government employee average.

But problems persisted. In early January, in a report to regulators, Jones acknowledged that incorrect data entries, service switching mistakes and communication problems continued to hamper ERCOT operations. Jones went so far as to indicate that some inefficiencies would become permanent fixtures of deregulation. "In exchange for an ability to shop around and get savings, (customers must allow) for a process that is more complicated than it used to be," Jones said.

On June 11, ERCOT agreed to curb some of its most egregious spending. A month later, however, ERCOT called for a near doubling of the ratepayer fee that supports its operations. The hike would come in addition to the Price To Beat increases requested by the state's major utilities. "Clearly, there needs to be greater oversight," said state Rep. Sylvester Turner, then vice chairman of the House panel overseeing deregulation.

Wholesale Market

More details emerged in 2002 about the wholesale price spikes that occurred during the deregulation pilot project. A PUC investigation found that six companies had improperly profited by incorrectly projecting their own energy needs in late 2001. In one case, a company consistently missed its projections by incredible margins — between 75,000 percent to 400,000 percent. By failing to accurately project their power needs, the companies would create the appearance that power demand did not match power availability and then get paid extra for relieving congestion that did not exist.

All told, the companies netted \$29 million in improper revenues for engaging in activities similar to the illegal activities that Enron used in California.

The PUC declined to publicly identify these companies, claiming they were protected by privacy rules. But gradually the companies identified themselves. Among them were: TXU, Constellation Power Source, Mirant Americas Energy Marketing, Reliant Energy Service and American Electric Power Service. In April, after being confronted by a reporter, the last company finally owned up. It was Enron.

All told, the companies netted \$29 million in improper revenues for engaging in activities similar to the illegal activities that Enron used in California. In Texas, TXU made the most money off the activities. The company and others claimed the overpayments were the result of start-up problems in the wholesale market. In terms of missed projections, Enron was — by far — the worst offender. According to PUC documents, Enron improperly received \$1 million to \$6 million by over-scheduling transmission by an average of 66,000 percent for a period of 29 days. Municipally-owned utilities reported that they would have to pay about \$10 million in excess charges as a result of Enron's activities and those of other power wholesalers.

Enron's Illegal Market Manipulation

In October 2002, Timothy Belden, the chief energy trader for Enron's West Coast power trading desk, pleaded guilty to conspiracy to commit wire fraud. Belden was among several Enron traders who created schemes with nefarious sounding names like "Ricochet" and "Death Star." Their purpose was to manipulate California's energy markets in order to gain unfair profits.

"Beginning in approximately 1998, and ending in approximately 2001, I and other individuals at Enron agreed to devise and implement a series of fraudulent schemes through these markets," Belden admitted in his plea agreement. Toward that end, the company knowingly submitted false information to the system operator in California, he said.

"We intentionally filed schedules designed to increase congestion on California transmission lines," Belden stated in his plea agreement. "We were paid to 'relieve' congestion when, in fact, we did not relieve it. ... We scheduled energy that we did not have, or did not intend to supply. As a result of these false schedules, we were able to manipulate prices in certain markets."

Belden would later testify that the activities resulted in as much as \$1 billion in profits for Enron during the California energy crisis. In audio tapes that became public in 2004, Enron traders could be heard making jokes about stealing from "those poor grandmothers" in California and gleefully proclaimed "burn, baby, burn" when a fire on a transmission line allowed the company to increase profits.

Enron also allegedly engaged in market manipulation in Texas during this state's deregulation pilot project in 2001, according to the Public Utility Commission and the Office of Public Utility Counsel.

CUSTOMER PROTECTIONS TESTED: [Enron Affiliate Abandons Texas Market and its Customers](#)

On June 10, 2002, New Power, the cash-strapped Enron affiliate, announced it was abandoning the state's electric market and switching its nearly 80,000 customers to other providers. A day later, the company, which had lost \$173 million through the end of 2001, filed for bankruptcy.

Until its implosion, New Power had been the most aggressive marketer of energy in Texas — so aggressive, in fact, that it also led all other electric retailers for the number of complaints lodged against it for signing up customers without proper authorization. In September, the PUC went after New Power for errors on about 46,000 bills. PUC executive director Lane Lanford said in a letter to New Power that the agency sought to fine the company based on “the egregiousness and repetition of the violations, the seriousness of the violations, the resulting economic harm, previous history of violations and efforts to correct the violations.”

The company also figured in conflict-of-interest lawsuits filed during 2002. Max Yzaguirre, a former Enron executive, was serving as PUC chairman in December when the PUC was setting the initial Price To Beat rates. A coalition of cities argued that the PUC set those rates too high and that as such they unfairly benefited New Power. Two other city lawsuits alleged a similar conflict by Commissioner Brett Perlman, who had worked as an Enron consultant. The suits said both Commissioner Perlman and Commissioner Yzaguirre should have recused themselves because their actions, in effect, benefited the company that formerly wrote their paychecks.

Although the suits were ultimately dismissed, Chairman Yzaguirre came under deep criticism because he had failed to disclose the extent of his Enron connections and ultimately resigned from the PUC in early 2002.

“This also calls into question the whole process as to how we establish rates,” said Tom “Smitty” Smith, director of the Texas office of Public Citizen. “Is our goal to make electricity affordable for consumers, or is it to ensure profits for companies? Is our government designed to protect the people or the power companies?”



Year: 2003 The 78th Texas Legislature — Staying the Course

The 78th Texas Legislative Session convened in January. Soon afterwards state Sen. Gonzalo Barrientos, D-Austin, proposed Senate Bill 1792 to correct some of the flaws in the Price To Beat rule. The electric industry responded predictably. “Any further change to the system could upset the competitive electric market in Texas,” said John Fainter, president of the Association of Electric Companies of Texas. The Legislature followed the industry’s lead and rejected SB 1792. It also rejected House Bill 2335, by state Rep. Sylvester Turner, that would have put new limits on how much generation capacity any one company can control. The bill was designed to prevent companies from controlling too much of the market and manipulating prices. But again, the industry insisted the market was working fine. Despite the price spikes during the opening days of the market — and more suspicious spikes during a recent cold snap — industry representatives insisted that the Texas market was a model for the rest of the nation.

...In TXU’s case, its first new rate hike of the year amounted to a 12-percent price increase – the largest in recent memory, far larger than any rate increases initiated under regulation.

But while lawmakers declined to reform Senate Bill 7, they did take action that had the effect of undermining an important consumer protection in the bill. Among its many other provisions, Senate Bill 7 also authorized the creation of “System Benefit Fund” to provide bill-paying assistance for low-income Texans. In 2003 the Texas Legislature acquired the \$185 million that had so far accrued into this fund and used the money to certify the budget. As a consequence, 700,000 low-income Texans ended up paying more for electricity than they otherwise would have. Ratepayers also continued financing the System Benefit Fund through regular surcharges on their home bills. Texans have poured hundreds of millions of dollars into

the fund, although thanks to legislative decisions much of the money has never been used for its intended purpose.

PRICE TO BEAT INCREASES CONTINUE

Retail electric providers continued using the controversial Price To Beat mechanism in 2003 to ratchet up rates in lockstep with increases in natural gas prices. In TXU’s case, its first new rate hike of the year amounted to a 12-percent price increase — the largest in recent memory and far larger than any rate increases initiated under regulation. In August, the company increased its prices for a second time. By any measure, Price To Beat customers would now be paying more for electricity than they did on the last day of the old regulated system. And this, even though the price of natural gas had gone down from the level it was before the market deregulated. The problem was the flawed Price To Beat mechanism effectively became a one-way street for prices. Under the Price To Beat, prices went in only one direction: up.

WHOLESALE MARKET: Hockey Stick Bidding Causes Price Spikes

Prices in the wholesale market spiked during a cold snap in late February. The freezing temperatures hampered plant operations, curtailed natural gas supplies and sent wholesale spot prices soaring to \$990 per megawatt hour for brief periods. But the PUC also turned up evidence that energy traders took advantage of the unusual weather on Feb. 24, 25 and 26 to ratchet up prices and increase profits.

How can this occur? ERCOT manages an automated bidding process for the spot market, called the “balancing energy market.” Power companies submit bids reflecting the amount of power they are able to supply and the price they are willing to receive if selected to supply the power. ERCOT accepts the bid or combination of bids to fully supply power needed, starting with the lowest price bid first and continuing with higher priced bids until it has enough power to cover all demand during a given interval.

But pursuant to its rules, ERCOT pays the last accepted price per megawatt-hour — that is, the most expensive selected bid — to all successful bidders. That means a bidder who

The PUC and ERCOT

The Texas Legislature created the state's Public Utility Commission in 1975 to regulate telephone and electric service. The PUC is led by three commissioners, each appointed by the governor to serve six-year terms. The PUC's responsibilities include:

- Regulating rates for the monopoly transmission and distribution providers that operate within deregulated areas of the state.
- Overseeing the Electric Reliability Council of Texas, the organization that oversees most of the state's power grid.
- Overseeing the competitive electricity market within the area of the ERCOT grid.
- Adopting and enforcing rules relating to retail electric competition.
- Regulating retail rates in areas outside the boundaries of ERCOT.
- Licensing new transmission facilities for investor-owned utilities and cooperatives.
- Licensing retail electric providers.

The Electric Reliability Council of Texas was formed in 1970 to help enforce standards to ensure the reliability of the state's power grid. ERCOT was not considered to be a government entity that exercised state power, but rather a volunteer membership organization of electric utilities. ERCOT was given dramatic new responsibilities with the adoption of the state's electric deregulation law in 1999 and now functions as both the technical operator of the transmission grid and the decision-making organization that creates rules for the wholesale electricity market. ERCOT's responsibilities include:

- Managing the flow of electricity across a grid that covers 75 percent of the state's geographic territory, and 85 percent of the electricity market.
- Supervising transmission planning to meet existing and future electricity demands.
- Maintaining a database to record the relationship between retail electricity providers and their customers.
- Administering the state's Renewable Energy Credit Program.

For more about ERCOT, see Appendix E

Source: The Energy Report 2008, Office of Texas Comptroller, Chapter 27; Jared M. Fleisher, "ERCOT's Jurisdictional Status: a Legal History and Contemporary Appraisal," Texas Journal of Oil, Gas and Energy Law, March 19, 2008.

offered electricity for \$1 per megawatt-hour could end up getting paid \$1,000 for that energy if the last bid accepted by ERCOT was for \$1,000 per megawatt-hour energy. This aspect of ERCOT rules leaves the market vulnerable to an improper bidding strategy known as "hockey stick" bidding. In its investigation of the February price spikes, the PUC determined that some companies were engaging in these sorts of practices. "Hockey stick bidding occurs when a market participant offers a small portion of its capacity or energy at an extremely high price," the PUC noted in a

report on the February cold snap. "Under normal circumstances, these small amounts of energy and capacity are not needed, and therefore do not affect prices. However, during the extreme weather event, ERCOT needed the entire energy bid into the (wholesale spot market), and the resulting price was set by a hockey bid." The commission estimated that the hockey stick bidding cost the market an extra \$17 million.

Effects to the market from these price manipulation strategies go beyond just increasing the cost paid for power. For instance, the price spikes experienced during the February

ice storm led to the bankruptcy of a competitive electric provider, Texas Commercial Power. The company sued, alleging that TXU and other companies were unfairly manipulating the market in order to drive up their own revenues.

ERCOT BEGINS MOVE TOWARD THE NODAL MARKET

In the wake of early price spikes in the wholesale market — spikes typically associated with congestion on the overburdened transmission system — the PUC gave the green light to a new market design. This proposed new system, a “nodal” system, would change how ERCOT oversees wholesale electricity transactions. It would replace the then-existing “zonal market” system whereby ERCOT supervises transactions as they occur in broad geographic regions (zones) of Texas with one where ERCOT would oversee transactions in thousands of smaller areas, or nodes. ERCOT began ironing out the details in 2003.

In theory, this new nodal system would allow the laws of supply and demand to bring more efficiency to grid operations. “This is the natural progression of things — the question is how far we need to go,” said Tom Noel, the organization’s chief executive officer. But to implement this new system, ERCOT — an organization that as yet had failed to inspire much confidence with lawmakers and regulators — would have to traverse an ocean of complex technical hurdles. In discussions with policymakers in 2003, ERCOT officials said they expected the nodal market to “go live”

within three years. A consultant hired at the direction of the PUC projected the costs to ERCOT for implementing the nodal market at between \$59.8 million and \$76.3 million.

But the transition would have to take place without ERCOT CEO Tom Noel. Already under fire for the disastrous pilot project in 2001, the billing errors and the switching problems, Noel announced his resignation from ERCOT in October. Some lawmakers had openly called for it.

BAD NEWS/GOOD NEWS: [Consumers Complain to PUC in Record Numbers](#); [State Exceeds Energy Efficiency Goals](#)

The number of complaints regarding electric service filed at the Texas Public Utility Commission increased steadily since the market opening and peaked in July and August of 2003. Over the course of the fiscal year, the PUC’s Customer Service Division received more than 17,000 electricity complaints — most relating to billing, although many consumers also complained about service disconnections and faulty service. This would mark an all-time high for the number of annual complaints under the Texas deregulation law.

Also in 2003, the state exceeded an energy efficiency goal set forth in Senate Bill 7 by 11 percent. Under the legislation, regulated transmission utilities were to administer incentive programs designed to reduce by 10 percent annual increases in energy demand. In 2003, utilities spent \$70 million on the program, according to the PUC.

In the investigation of the February price spikes, the PUC determined that some companies were engaging in hockey stick bidding.

The agency reported that the demand reduction goal for 2003 was 135 megawatts, and utilities exceeded that target with an actual reduction of 151 megawatts. The PUC noted that the program equitably served residential, commercial and industrial customers.

Year: 2004 The ERCOT Scandal — A “Crisis of Confidence”

DOMINANT TXU CAN DRIVE UP PRICES

In January 2004, the Texas Public Utility Commission issued a 33-page report concluding that at least one generator, TXU, owned or controlled so much generation capacity that it was capable of undermining a segment of the wholesale energy market. By virtue of the amount of power it could deploy or withhold, TXU was able to drive up prices, even if it did not intend to do so. The agency’s report concluded the company’s uniquely dominant position raised questions for the future of competition.

...while the megawatt-hour price of such energy typically sold for less than \$50, it spiked to \$990 during the study period...

The PUC report analyzed prevailing market conditions at the time of the price spikes in a segment of the wholesale market known as the balancing energy market. (For more about the Balancing Energy Market, see the sidebar on page 20.) It found that while the megawatt-hour price of such energy typically sold for less than \$50, it spiked to \$990 during the study period, which was between May 2002 and August 2003.

The analysis demonstrates that TXU routinely was guaranteed to have its bids selected — no matter the price — simply because it controlled so much power. “The results of this study show that TXU’s market position is so pivotal that just about anything the company does with respect to (that segment of the wholesale market) will affect balancing energy prices, regardless of the reasons behind its decisions,” the study said.

Legislation considered during the 2003 session would have addressed pivotal provider problems by adding more market controls on wholesale providers. But generators successfully opposed the legislation, just as they opposed any suggestion of improper conduct raised by the price spikes. “Our position is that we do not have control over prices,”

TXU spokesman Chris Schein said. “They [the authors of the PUC report] are saying we have an impact on momentary prices, but there’s no way that we can sustain control over prices.” In December, however, the PUC announced it was again looking at TXU for its involvement in a new round of price spikes. In the newest case, TXU had submitted bids to sell its power for \$400 per megawatt-hour, although such power typically sold for about \$50 at the time.

These price spikes occurred with shocking regularity. All told, power prices spiked nearly 100 times in late November and early December of 2004. The problem was so pronounced that PUC Chairman Paul Hudson threatened to call upon the Attorney General’s Office or the Securities and Exchange Commission to investigate.

ERCOT: COST-BENEFIT ANALYSIS OF THE NODAL PROJECT RAISES QUESTIONS

ERCOT and regulators continued working in 2004 on creating a “nodal” market. ERCOT hired a Massachusetts-based consulting firm to conduct a cost-benefit analysis of implementing a nodal market in Texas — a study that regulators said they wanted to see before giving their final OK.

However, the review did not include any consideration of the nodal system’s potential impact on home bills. “How can you do a cost-benefit study without knowing the impact on consumers? That doesn’t make any sense at all,” said Diane Weklar, executive director of the DFW Electric Consumer Coalition. ERCOT also declined to say publicly how much it spent on the report, even though (as with all ERCOT expenditures) it was Texas ratepayers who ultimately would foot the bill. “We’re not in the habit of releasing information on ongoing business practices,” Susan Vincent, corporate counsel for ERCOT, said in early July.

The Procurement Scandal

Less than one month later, then ERCOT-board chairman Mike Green, a TXU executive, would be telling the PUC: “I want openness.” But he wasn’t responding to PUC inquiries about the nodal project or consultant’s reports. Rather, Green was responding to inquiries about what then became a much more pressing matter: possible criminal activity.

At issue were what ERCOT officials vaguely termed “vendor procurement irregularities.” ERCOT’s CEO had learned about the irregularities on March 29, 2004, but waited two months before alerting the commission. The Department of Public Safety was also alerted, and ERCOT acknowledged its own investigation.

Details remained elusive, although eventually it became clear that the allegations involved billing improprieties and possible self-dealing by ERCOT’s cyber-security personnel. ERCOT failed to detect the criminal background of a former employee allegedly involved in improprieties. As a result of the allegations, several ERCOT staff members quit or were fired.

The criminal investigation began to focus on three managers in two firms that handled computer security for ERCOT. The two firms, Cyberensics Corp. and ECT Global Solutions Inc., had ERCOT contracts worth at least \$2.5 million. Investigators attempted to ascertain whether the managers had stolen or laundered ERCOT funds.

By June, PUC chairman Paul Hudson had declared a “crisis of confidence” with ERCOT’s internal controls. By July, more than four dozen witnesses had been interviewed by DPS investigators, and a grand jury in Williamson County had subpoenaed notes from an ERCOT lawyer. In September, ERCOT was taking heat from a joint interim House-Senate committee for its lack of financial controls, for perceived arrogance among top officials in the face of these problems and for cutting checks to a contractor that had a dead man on its payroll.

“There appears to have been some serious breakdowns of internal controls and management practices at ERCOT,” said Sen. Troy Fraser, R-Horseshoe Bay, chairman of one of the committees reviewing the organization.

Continued Customer “Stickiness”

As of September 2004, fewer than 20 percent of residential customers were getting service from a power company not affiliated with one of the state’s traditional utilities.

Although more customers were testing the deregulated market than in 2003, the fact that such a small percentage of customers had switched from traditional electric providers illustrated the continued “stickiness” in the residential market.

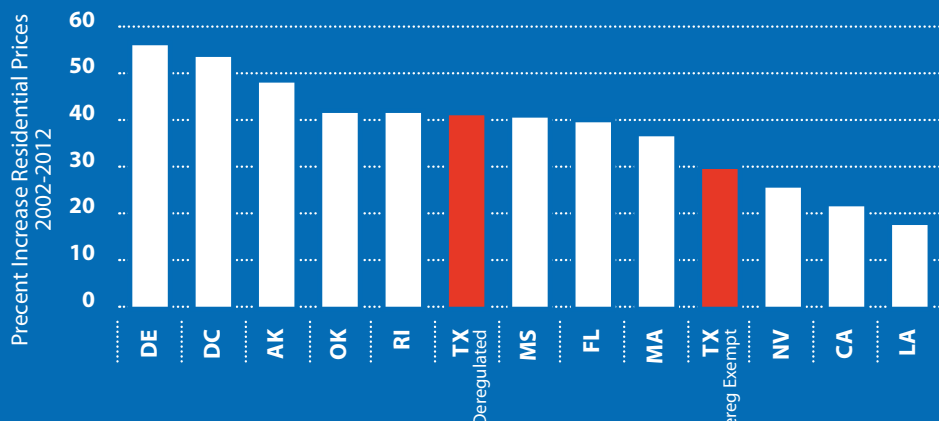
The PUC reported that between seven and 12 retail electric providers were serving residential customers in the state’s major service territories. The PUC blamed “substantial customer acquisition costs” — that is, the expense of advertising faced by electric competitors. The PUC also said competitors faced increasing investments for billing systems and call centers as well as added costs associated with resolving customer complaints.

In September, ERCOT was taking heat from a joint interim House-Senate committee for its lack of financial controls, for perceived arrogance among top officials in the face of these problems and for cutting checks to a contractor that had a dead man on its payroll.

The PUC acknowledged that the Price To Beat rate paid by many Texans was above-market. Repeated Price To Beat increases had driven up Price To Beat rates 20 to 35 percent between January 2003 and September 2004, according to the agency. Competitive prices generally remained below the Price To Beat, but nonetheless rose in tandem with it. The PUC also noted that since the market had opened to competition, the price of electricity in Texas had risen at a greater pace than it had in the United States as a whole.

Price Increases: Residential Electric Rates vs. Natural Gas

Source: NYMEX Exchange, United States Energy Information Administration, <http://www.eia.doe.gov/cneaf/electricity/page/eia861.html>



This exhibit gives us a sense of pricing trends among states heavily reliant upon natural gas to fuel electric generating units. Electricity prices roughly parallel natural gas prices in such states. Here, deregulated Texas sits in the middle of the pack. This exhibit demonstrates that residents in six other gas-reliant states endured less onerous price increases than those endured by residents in deregulated Texas. Meanwhile, residents in five other gas-reliant states endured greater price increases than those observed in deregulated Texas.

BILLIONS OF DOLLARS IN STRANDED COSTS ADDED TO ELECTRIC BILLS

In November, 2004, the Texas Public Utility Commission determined that ratepayers owed Houston's CenterPoint Electric Delivery Company \$2.3 billion in stranded costs. The PUC would also make similar determinations for other Texas generating companies — albeit for lesser amounts.

Stranded costs, remember, are meant to represent the difference between the book value of a company's assets and the price that would be paid by someone buying the assets on the open market. Think of a company that pays \$1 billion to build a nuclear power plant under regulation but then can only sell it for \$500 million in a deregulated market. In this over-simplified example, the \$500 million difference would be the "stranded cost" of the nuclear plant. Under Senate Bill 7, electric companies have the right to recover from ratepayers the stranded costs attributable to generation assets that the utilities were ordered to build but are no longer valuable. (For more about stranded costs payments, see page 66).

The idea behind stranded costs is that utilities should not be harmed by the transition to the deregulated market because they owe more for generating plants than what they could sell those plants for in the open market. Ultimately, it was decided that ratepayers would pay the utilities their "stranded investment" through surcharges that would be assessed against every customer. In exchange for paying stranded costs, it was rationalized that ratepayers would have access to better prices in the competitive market. In theory, the benefit of lower prices would far outweigh the burden of stranded cost surcharges.

But decisions relating to stranded costs for CenterPoint, Texas Central Company and Texas-New Mexico Power caused real harm to consumers. That's because clear evidence suggests that supposedly uneconomic plants were woefully undervalued.

For instance, in determining the stranded cost pay-out to Houston's CenterPoint, the PUC considered a partial stock sale by the company that established the value of its generating assets at \$3.65 billion. But days after the PUC calculated CenterPoint's stranded costs, the company's

equity owners resold those same generating assets for \$8.3 billion.

So what was the true value of those assets — \$3.65 billion or \$8.3 billion? If the PUC had used something closer to the \$8.3 billion figure, the stranded costs associated with the assets would be very close to zero. Instead the \$3.65 billion asset valuation was used. As a result, all customers of the former HL&P must pay billions of dollars in stranded costs for years to come.

...ratepayers who never received any benefit from the excess mitigation credits nonetheless were on the hook for paying them back. And these payments were to be added to already questionable multi-billion dollar charges to ratepayers for stranded costs.

In fact, all assets in Texas used to calculate the billions of dollars of stranded cost charges to ratepayers were resold at a substantial profit.

Also, remember that the PUC earlier projected that Texas electric companies would end up with negative stranded costs. In 2001, the PUC's economic modeling showed that assets like nuclear power plants would become more valuable, not less, and as a consequence the owners of those assets should surrender some money to reflect the windfall they would receive under deregulation.

When legislation failed in 2001 that would have required electric companies to refund that projected windfall to ratepayers, the PUC stepped in and ordered generators to make corresponding payments in the form of "excess

mitigation credits," or EMCs. But the credits for the most part ended up in the pockets of electric retailers, not ratepayers. The total value of the EMCs exceeded \$2 billion. The PUC then added the excess mitigation credits — again credits that never went to ratepayers — to their stranded cost calculations. Said another way: Ratepayers who never received any benefit from the excess mitigation credits nonetheless were on the hook for paying them back. And these payments were to be added to already questionable multi-billion dollar charges to ratepayers for stranded costs. (For more about excess mitigation credits, see Appendix C).



Year: 2005 The 79th Texas Legislature — The Wind Power Initiative

In April 2005, Public Citizen, an environmental and consumer advocacy group, released a study showing that the price of electricity in deregulated areas of the state had increased at more than twice the rate as electricity prices outside deregulation. In May, the Public Utility Commission concluded yet again that TXU had the ability to unilaterally drive up wholesale prices. These factors together, plus clear problems with the defective Price To Beat mechanism and a scheduled top-to-bottom agency review of the Public Utility Commission, increased expectations that the Texas Legislature would adopt major reforms in 2005.

In April 2005, Public Citizen released a study showing that the price of electricity in deregulated areas of the state had increased at more than twice the rate as electricity prices outside deregulation.

That none were forthcoming is all the more surprising given that industry representatives had convinced lawmakers during previous legislative sessions to put off the consideration of any important reforms until 2005, arguing that it made more sense to wait until the completion of an expected efficiency review of the PUC that year. But then after the completion of that review process — and with electric bills up nearly 50 percent since the beginning of deregulation — utility lobbyists still argued against reform. As one utility representative said: “If it ain’t broke, don’t fix it.” Two important bills that lawmakers considered and ultimately rejected during the 79th session were Senate Bill 759 and Senate Bill 764. The first would have made it easier for cities to aggregate together their citizens into bulk-purchasing groups in order to negotiate for them better electricity deals. The PUC reported that such aggregation projects in other states had resulted in ratepayer savings. The second bill would have limited how much supply could be owned or controlled by generation companies. The

legislation would have addressed market power issues by discouraging electric companies from unfairly controlling wholesale prices.

But while both those bills failed, that’s not to say that ratepayers would be unaffected by the actions of their lawmakers in 2005. Here are a few of the measures adopted during the 79th regular and special sessions. Some had the potential to increase bills.

- Money meant for the System Benefit Fund (which had been created as part of Senate Bill 7 to provide bill discounts for low-income Texans) was diverted to the state’s general revenue fund. The Texas Legislature had taken money from the ratepayer-supported fund once before, in 2003, to also help fill a budget gap that year. With the latest budget action, lawmakers used the last of the available money — and as a result, 350,000 low-income Texans ended up paying more for electricity than they otherwise would have. The budget action also had the effect of converting what otherwise would be considered a surcharge on ratepayers’ bills into a sales tax on electricity.
- Senate Bill 5 (not technically an electric bill but one relating to the telecommunications industry) permitted electric utilities to enter into deals to create broadband service over ratepayer-financed transmission systems. Broadband companies that sell the service could keep the revenue, although some of it would potentially flow back to the utility. Ratepayers who paid for the transmission system and made the arrangement possible would not be able to receive the broadband service unless they were to pay for it, and would not get any reduction in their rates to reflect profit to the utility company from the service. Ratepayers would also have to pay for the digital meters that work with the broadband service. As it turned out, Oncor Electric installed over 100,000 digital “smart meters” under this program but failed to install the appropriate models and then had to replace them — all at added ratepayer expense.

- Senate Bill 20, adopted during special session, established special zones (called “Competitive Renewable Energy Zones” or CREZ for short) to mark the site of future transmission construction. However, the new lines would not directly address the state’s ongoing transmission shortage but rather would connect to sparsely populated areas of the Panhandle and far West Texas to support future wind generation. The cost of the CREZ transmission projects would reach into the billions of dollars. Such new wind construction also would lead to more reliability challenges for ERCOT. Senate Bill 20 likewise expanded renewable energy goals included in Senate Bill 7 — from 2,880 megawatts of capacity by Jan. 1, 2009, to 3,272 megawatts — and established a new target of 10,000 megawatts of renewable energy capacity by 2025.

STATE EXCEEDS SENATE BILL 7 TARGET FOR RENEWABLE ENERGY

Senate Bill 20 set forth other targets as well: 4,265 megawatts of renewable energy capacity by 2011, 5,256 by 2013 and 5,880 by 2015. And lawmakers had plenty of reason to believe the state would meet those ambitious targets. The construction of renewable energy generation already had exceeded the goals set forth in Senate Bill 7 and the Public Utility Commission was estimating that there would be more than 1,300 megawatts of new renewable energy capacity online in 2005. That exceeded the original target in SB 7 by more than 500 megawatts, or nearly 63 percent. The PUC reported that wind generation comprised the lion’s share of the new renewable generation and linked much of the growth to federal tax credits.

The PUC also reported success in its implementation of energy efficiency programs established by Senate Bill 7. Under the legislation, utilities were required to administer energy efficiency incentive programs with the goal of reducing annual growth in energy demand by at least 10 percent. The PUC noted that the programs saved nearly 500,000 megawatt-hours of energy in 2005. Utilities exceeded their demand reduction goals in 2005 by 27 percent, according to the PUC.

“Overall, program performance appears to have been successful,” the PUC reported.

The PUC also acknowledged that for part of 2005, the average price of competitive offers was actually higher than the Price To Beat.

Utilities spent roughly \$78 million in ratepayer money on the program in 2005. The PUC estimated the potential 10-year savings from the program at \$290 million.

The ERCOT Procurement Scandal Continues

In January, a grand jury indicted six former ERCOT managers in the procurement scandal that had come to light in 2004. The officials were accused of having improperly billed \$2 million to the organization for work that was never done. In August, prosecutors obtained a guilty plea from the former director of information technology and information services for ERCOT. The former executive admitted to conspiring with five others to set up shell security companies and using those companies to bilk ERCOT. The Attorney General said some invoices corresponded to unperformed work or undelivered goods. The group also billed for work supposedly performed by non-existent employees, according to the AG’s office.

Responding to the scandal, lawmakers in 2005 adopted legislation giving the Public Utility Commission greater authority over ERCOT’s finances and activities.

Customer Choice: Higher Prices than Regulated Rates, Plus More Complaints

By the end of 2005, after four years of deregulation, fewer than half of residential customers had switched off the above-market Price To Beat rate, according to PUC estimates. In part, this reflected the inherent “stickiness” in the residential market. But many consumers also complained that the deals offered by competitors were less than enticing.

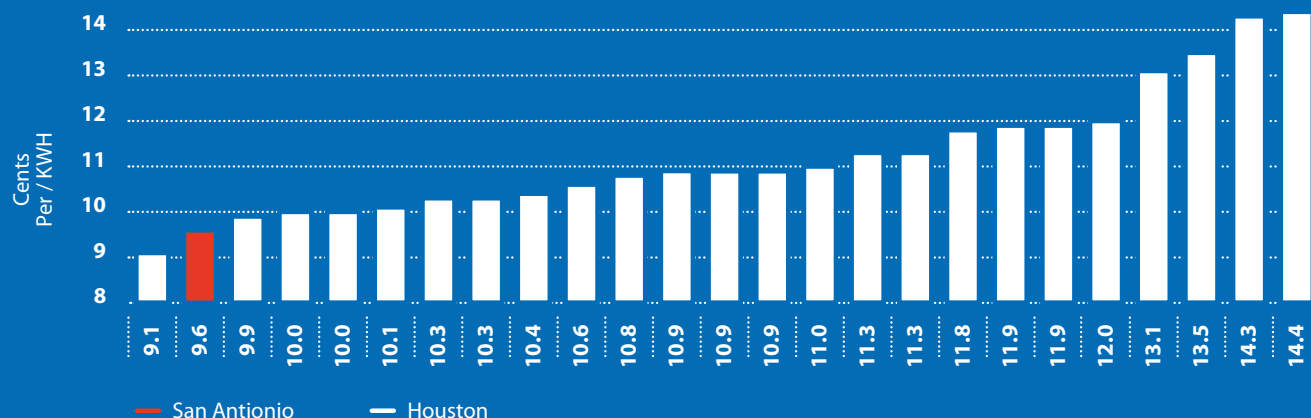
“Guess what? There is only a cent or two difference in the cost between all providers,” one frustrated resident wrote to PUC Chairman Paul Hudson. The PUC also acknowledged that for part of 2005, the average price of competitive offers was actually higher than the Price To Beat.

To make matters worse, Hurricanes Katrina and Rita disrupted natural gas production during the last months of

2005. That sent both natural gas and electricity prices to historically high levels. In November, TXU began phasing in a 24-percent rate increase. Other companies followed suit with similar increases. Because of the defective Price To Beat rule, electric rates would remain at those historically high levels even after natural gas production came back online and gas prices stabilized.

A Tale of Two Cities — Houston and San Antonio*

*Based on rate surveys by the Public Utility Commission.



In Houston’s deregulated market, dozens of retail electric providers compete for customers. In San Antonio, a single municipally-owned utility serves everyone. Houston is the state’s largest Texas city with a deregulated retail electric market. San Antonio is the state’s largest city outside retail deregulation. Where do customers get a better deal?

According to data from an December 2013 pricing survey by the Public Utility Commission, electricity sold through almost every fixed-rated deal in Houston costs more than electricity sold by the single municipally-owned utility in San Antonio. This follows a common trend. For instance, a PUC pricing survey from April 2011 showed that electricity then sold under Houston’s very lowest fixed-rate deal was still more expensive than electricity sold by every municipally-owned utility surveyed by the agency, and more expensive than all but one investor-owned utility.

Year: 2006 Mixed Reviews and Rolling Blackouts

The year began with what the PUC touted as good news for consumers. According to a report released by the agency in February, Houston residents could have saved over \$1,000 under deregulation and Dallas residents could have saved about \$800.

Not that Texans had actually saved this money under Senate Bill 7. Only that they could have.

The “savings” were created by comparing the last regulated rate — meaning the rate charged on Dec. 31, 2001 — to the lowest competitive offers in Houston, Dallas and Fort Worth for the years 2002, 2003, 2004 and 2005. The agency then calculated the difference, assuming that a hypothetical resident had selected the lowest-priced offer during each of those four years. A Dallas resident, for instance, could have saved 17 percent over what he would have paid under the old regulated system, according to the report.

However the analysis was flawed. First, it was unclear how many customers would have been eligible for the lowest priced offers. Some of the retailers cited by the PUC report had limited capacity and typically operated with plenty of caveats. Moreover, Texans receiving service through fixed-rate electricity contracts cannot willy-nilly switch providers without paying early termination penalties. There is also the question of what is the appropriate benchmark price with which to make a comparison. By using the regulated rate charged on Dec. 31, 2001, the study relied upon a rate that was inflated by exorbitant fuel surcharges and excess earnings valued at hundreds of millions of dollars. Utilities were allowed to keep charging this regulated rate in anticipation of deregulation.

Even if the study is accepted at face value, it is clear that the millions of ratepayers still paying the Price To Beat in 2006 were getting an awful deal by paying unnecessarily high prices. And indeed, a separate review of rate filings showed that by 2006, the Price To Beat had increased by 84 percent in the Metroplex, by 81 percent in Houston, by 101 percent in Corpus Christi and by a whopping 116 percent in West Texas. Outside deregulated areas, price increases occurred over the same period but were much more modest. In Austin, with its municipally owned utility,

rates increased by 19.4 percent, for example. That means the most commonly paid rate in deregulated Houston increased five times faster than the rate paid in Austin, which remained outside deregulation.

“...without a doubt, (these environmental goals) could have been accomplished without going to full-scale deregulation ... without creating the series of unnecessary middlemen, in the form of Retail Electric Providers.”

— Tom “Smitty” Smith, Director of Public Citizen-Texas

The PUC analysis did not focus on the Price To Beat rate but rather the lowest-competitive offer in each service territory. But several reports from 2006 suggested that even those Texans who shopped around for electricity were paying too much for it. In March, for instance, AARP released a report showing that TXU and all of its cheapest North Texas competitors were charging rates out of line with fuel costs. Another survey released later in the year demonstrated that rates offered to customers in deregulated areas of North Texas were higher, on average, than rates in areas that remain under regulation. The survey showed that the best offer under deregulation was still more expensive than rates from almost every company outside deregulation. Likewise, Kenneth Rose, a senior fellow at Michigan State University and a leading expert on electric pricing and policy, released a nationwide survey in 2006 showing that electricity prices had gone up in Texas since deregulation, while those in regulated states had gone down. Another expert concluded that under deregulation Texans had paid some of the highest rates in the nation, a reversal of a decade of relatively cheap power under the old system.

The nationwide comparisons between regulated and deregulated prices were possible because the mix of markets provided for a control group to help answer a basic question: Does deregulation save money for consumers? Rose said the growing consensus among experts was that it does not. "Evidence that we're gathering (shows that the effectiveness of deregulation) — at least as we had originally thought it would work — is not bearing out from the customer perspective," Rose said.

In response to these concerns, the chairman of the Public Utility Commission pushed a proposal in 2006 to lower the Price To Beat. Chairman Paul Hudson noted that the price of natural gas had gone down substantially since Hurricanes Katrina and Rita, but that the Price To Beat rates didn't reflect the decrease. He wanted to push down the Price To Beat shortly before it expired for good in January, 2007. "It would be a disservice if ... residential customers remained on a final regulated rate (the Price To Beat rate) ... that no longer reflected the market," said Chairman Hudson, also noting that natural gas prices then embedded in Price To Beat rates were at least 15 percent higher than the actual price of natural gas in the open market.

The chairman's plan, which would have saved Texans an average of \$17 on their monthly power bills, was ultimately rejected. The commission voted 2-1 against it. Two commissioners even voted to block agency staff from taking testimony on the issue.

COMPLAINTS

In addition to concern about the Price To Beat, the PUC continued receiving thousands of complaints each year related to electricity service. Complaints had been on the rise ever since the state deregulated its market, peaking in 2003 and 2004 and then, after a dip in 2005, increasing again in 2006 to more than 10,000.

Problems with customer switching motivated a significant portion of those complaints. It had become clear that a process that typically had taken a day under the previous regulated system now could take two weeks or longer. (See Appendix B for more about consumer complaints filed with the PUC.)

ROLLING BLACKOUTS

On April 17, shortly after 4 p.m., hundreds of thousands

of Texans started losing power. The operator of the Texas power grid, the Electric Reliability Council of Texas, suddenly found itself without enough available generating capacity and ordered rolling blackouts across the state. Although ERCOT acted quickly to avert a more serious system-wide outage, its response nonetheless raised serious management questions. "You can't be out there cowboying, operating on your own," state Sen. Troy Fraser told organization officials shortly afterwards. Sen. Fraser and others complained that ERCOT had failed to alert key policymakers and law enforcement officials. He said regulators were caught flat-footed, and police officers were sent scrambling to direct cars after traffic signals unexpectedly stopped working.

PUC Chairman Paul Hudson also blasted ERCOT's response, complaining that grid managers did not call him directly about the emergency. "My immediate one-word reply is a bit too colorful to restate," Hudson said. But the PUC chairman also said that when it came to dealing with ERCOT, such communications breakdowns were nothing new.

The organization, charged with scheduling power across 38,000 miles of transmission lines, had done little to earn the confidence of lawmakers and regulators. Since the passage of SB 7 in 1999, ERCOT had mismanaged the deregulation pilot project, appeared incapable of efficiently processing switch requests for many months and drew fire for multi-million dollar billing errors. There were also problems with the organization's financial controls, as evidenced by the guilty pleas of several former executives on bribery and corruption charges.

In May, ERCOT chief executive officer Thomas F. Schrader resigned amid questions about his leadership. Schrader had, on occasion, bucked the PUC, even awarding raises to some employees over the objections of the commissioners. Schrader, when he came on board in 2004, had followed the tenure of Tom Noel, another ERCOT CEO who left under pressure.

MARKET POWER ABUSES PERSIST

Enron agreed shortly before the beginning of the new year to pay more than \$1.5 billion to settle claims that it had manipulated the California market. In 2006, TXU Wholesale came under investigation for allegedly engaging in similar trading practices in Texas.

This continued a history of such inquiries. In 2003, TXU drew regulatory scrutiny when energy that the company typically sold for less than \$50 a megawatt-hour shot up to \$990. In 2004, TXU was identified by a PUC consultant for more questionable bidding practices. In 2005, TXU practices “that raise substantial competitive concerns” were highlighted in another report issued by the group assigned to investigate potential market power abuses. That same year, a bankrupt competitor questioned TXU’s market activities in an unsuccessful lawsuit.

TEXAS MEETS RENEWABLE ENERGY MILESTONES

Senate Bill 7 called for the creation of 2,880 megawatts of new renewable energy capacity by 2009. Texas exceeded that goal in 2006 — three years early — and was ahead of schedule for meeting updated renewable energy targets created by Senate Bill 20. Texas also surpassed California in 2006 as the number one state in the nation for installed wind power. Worldwide, only Germany, Spain and Denmark had more wind power than Texas in 2006.

About 2.1 percent of electricity generated in Texas came from renewable sources in 2006, up from 1.5 percent from 2005. Within the ERCOT region, renewable energy provided 2.1 percent of peak generation, up from 1.5 percent in 2005.

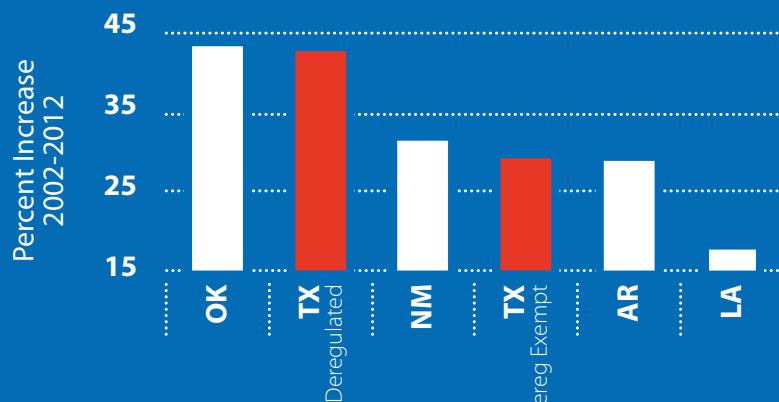
To foster the creation of new renewable generation, Senate Bill 7 established a system whereby electric retailers could earn and trade “Renewable Energy Credits” (RECs) for a portion of their energy sales. Under the program, electric retailers that do not acquire enough renewable energy to satisfy their obligations can purchase credits from other companies that have exceeded their obligations. Electric retailers that market so-called “green power” to customers also can obtain renewable energy credits for that purpose.

The RECs needed for the state to meet its renewable energy goals represented about 1.7 percent of energy sold to retail customers in 2006.

“This has been more successful than any other provision of the bill,” said Tom “Smitty” Smith, director of the Texas office of Public Citizen, referring to the environmental safeguards included in Senate Bill 7. He added, however, that “without a doubt, (these goals) could have been accomplished without going to full-scale deregulation ... without creating the series of unnecessary middlemen, in the form of Retail Electric Providers.” He also noted that much of the dramatic increase in wind power in Texas was attributable to federal tax credits.

Price Increases in Texas and Adjoining States: 2002-2012

Source: United States Energy Information Administration, http://www.eia.gov/cneaf/electricity/page/sales_revenue.xls



Since 2002, average electricity prices increased more in deregulated areas of Texas than they increased in all adjoining states except Oklahoma. This exhibit examines residential prices only.

Year: 2007 The 80th Texas Legislature — The TXU Buyout

Lawmakers in 2007 reported phone calls from hundreds of constituents irate about electric rates. The AARP said Senate Bill 7 had created a “deregulation mess” and made reform its No. 1 legislative priority. Even key supporters of Senate Bill 7 began raising doubts. “There has been insufficient participation of lower-cost providers — unfortunately, we have not seen the Southwest Airlines of the electric industry,” lamented former state Rep. Steve Wolens, the co-author of SB 7. He went on to say that “there are many, many issues, there are a ton of issues” with SB 7 and acknowledged that it had failed to create meaningful savings.

This was particularly troublesome given that Texas in 2007 had passed one of the last major milestones under SB 7.

The AARP said Senate Bill 7 had created a deregulation mess...

On Jan. 1, the Price To Beat expired. TXU in Dallas, Reliant Energy in Houston and the other legacy providers had been allowed to offer a variety of rate packages for some time. But one of them always had to be the Price To Beat. No longer. Now the legacy providers had free rein to charge whatever they wanted. The brakes were completely off.

In theory, market forces would keep prices down now that there were no capped rates. But evidence emerged in 2007 that the deregulated market continued to have problems transitioning into a fully competitive one.

For instance, a survey of residential electric prices through 2007 showed that Texans paid below average rates in the years prior to Senate Bill 7 and then well above the national average after deregulation came into effect. The survey indicated that consumers in Texas paid on average more for electricity than consumers in all other deregulated states with retail competition.

Industry representatives have consistently blamed high prices in Texas on the state’s reliance on natural gas as a fuel source for generation. But the survey showed that regulated states with a similar dependence on natural gas, such as Louisiana, experienced residential rate increases smaller than those in Texas. The PUC likewise noted that

TXU’s Price To Beat rate was the second highest among a sample of major providers nationwide with a heavy reliance on natural gas.

These findings illustrate a central fact about pricing under deregulation: High prices in Texas are not simply a function of the market’s reliance on natural gas but rather a function of how the market relies on natural gas. Under ERCOT rules all power accepted to meet demand in the spot market is paid for at the price of the most expensive power accepted to meet that demand. This becomes the “clearing price” on the wholesale spot market — and in most cases, it’s a gas plant that sets it. So, natural gas prices help set the price for all spot energy in ERCOT, which then ripples throughout the entire wholesale market, and in 2007 increased residential bills.

By contrast, regulated investor-owned utilities are required to charge rates that reflect the actual cost to generate power, based on the average of all of the fuel used in the utility’s generation fleet. This means that regulated retail rates include a fuel cost that is a blend of costs associated with several kinds of fuel, ranging from stable, low-priced lignite or coal, coal or nuclear generation to high-priced gas.

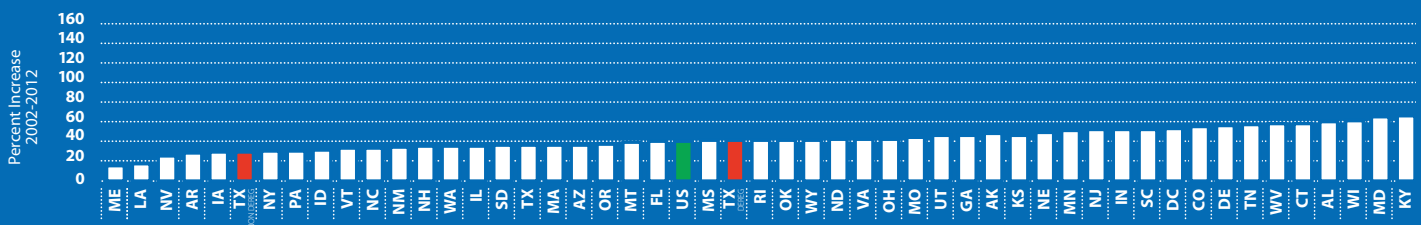
WHOLESALE ENERGY PRICES DOUBLE

The price of energy on the spot market more than doubled in September 2007, as compared to the price during the same month in 2006, according to an ERCOT report. This created revenues of \$76 million for generators in September of 2007, as compared to \$37.4 million during the same month in the previous year. This price increase, and others, were made possible in part because of rule changes at ERCOT and by the Public Utility Commission. Among other things, the PUC increased the price caps at which generators can offer their energy into the wholesale spot market. Previously, the cap was set at \$1,000 per megawatt-hour, a very high price and far in excess of the cost to operate any power plant on the system. After the PUC’s decision, the cap went to an even higher level.

As for ERCOT, the organization had earlier implemented market rules that allow for higher prices during the deployment of a particular form of capacity used to protect against power shortages.

Residential Electric Price Increases — Texas vs. United States 2002-2012

Source: United States Energy Information Administration, http://www.eia.gov/cneaf/electricity/page/sales_revenue.xls



Residential electricity prices in deregulated areas of Texas increased by slightly more than 40 percent between 2002 and 2012. That's slightly more than the increase registered nationwide, and about 10 percentage points higher than the increase registered in areas of Texas exempt from deregulation. This exhibit uses 2002 as a starting point because that was the year deregulation took effect in Texas. It ends with 2012 because that year was the most recent (at the time of publication) for which there was relevant data to conduct the analysis. This exhibit considers prices only within continental US.

That these changes contributed to the doubling of those September energy prices was not met with alarm by most market participants or by the PUC. That's because many market participants believed that higher prices represented a "truer" economic result under the theory that they provide an incentive for additional generation construction. Far from raising questions about whether the ERCOT market works for consumers, under this view high prices (and consistent price increases) were seen as evidence that the market is correct from an economic standpoint.

Of course, higher spot energy prices eventually lead to higher retail prices — that is, the prices that end-use consumers like homeowners pay. That's because ERCOT's spot market for energy heavily influences the prices paid by all wholesale buyers — whether they deal directly through that market or not.

Some advocates warned that this approach — that is, equating low prices with a problem in the market and higher prices as "success" — raised questions as to how consumers could ever benefit from deregulation.

ALLEGED MARKET POWER ABUSES IMPACT THE MARKET

TXU's trading practices remained an issue in 2007. In lawsuits, two former TXU power traders alleged a pattern of market manipulation by the power company. The traders said they notified their superiors about the improper activities, and the superiors condoned the behavior. The company denied wrongdoing.

The PUC also concluded on March 12 that TXU Wholesale had engaged in unfair trading practices. An outside expert

hired by the agency said that TXU during one period in 2005 had driven up some wholesale prices by 15.5 percent and racked up \$19 million in unfair profits. The consultants found that “since TXU raised prices in the market and profited from its activities ... TXU’s behavior constitutes market power abuse.” Two weeks later the PUC recommended \$210 million in fines, a record for the agency.

In lawsuits, two former TXU power traders alleged a pattern of market manipulation by the power company.

The very next month, on April 3, 2007, wholesale prices spiked to levels never before seen in Texas. ERCOT reported that balancing energy shot up to \$1,500 per megawatt hour on three separate occasions. The prices could have gone even higher if not for an existing cap of \$1,500. Typically, the power sells for less than \$100.

Later that same month a sister company of Houston’s Reliant Energy improperly held back wholesale power. It later agreed to pay over \$100,000 in penalties.

THE TXU BUYOUT: THE LARGEST LEVERAGED BUYOUT IN HISTORY

The 80th legislative session began with bold talk of reform. Many lawmakers reported complaints from constituents that the deregulated market was not living up to its potential. Lawmakers vowed to pursue changes to create real competition and to lower rates. They floated bills to establish new controls over potential market manipulation by wholesale generators, to create some price controls, and to allow municipalities to negotiate deals on behalf of large blocks of customers. They received support from consumer groups across the state, some of whom mounted door-to-door campaigns.

By contrast, industry representatives warned against changing SB 7. Despite the price spikes, the numerous findings of questionable conduct and evidence of ratepayer overpayments, the industry’s position remained immutable: SB 7 was, for the most part, working as intended. Said John Fainter, president of the Association of Electric Companies

of Texas: “You’ve got to be careful about what you do. We think that we have a well-designed market.”

Among the most important of the reform bills were Senate Bills 482 and 483, both by state Sen. Troy Fraser, R-Horseshoe Bay. The first would have made TXU split into separate entities to limit its dominance in Texas. It would also have given the Public Utility Commission power to cap residential rates if the agency found them out of line with market prices. As drafted, the second bill, SB 483, would have prohibited any company from controlling more than 20 percent of power generation in any of four distinct regions or zones within Texas. In the North Texas zone, TXU owned about 45 percent of the generation — and indirectly controlled much more than that. Sen. Fraser unveiled both bills on Feb. 7, noting that SB 7 had not sufficiently helped residential ratepayers. “The legislation filed today will strengthen competitive forces and improve the residential market,” he said.

Other important bills included one that would reinstate the System Benefit Fund, one that would allow for the creation of a regulated rate if the PUC determined the market was insufficiently competitive, one that would create a regulated rate based on cost of service and one that called upon the PUC to recommend alternatives to deregulation. But the political landscape changed dramatically after word leaked out of a proposed business deal between TXU and Kohlberg Kravis Roberts & Co., a private equity firm. The outside investors were offering to buy TXU for \$45 billion, including debt. If the deal went through, it would be the largest such transaction in U.S. history.

To garner support the buyout partners promised a host of inducements, including lower rates through 2008 and an agreement to build only three of 11 coal generating plants supposedly planned for construction by TXU. However the *Dallas Morning News* released an independent study on June 24 that concluded that TXU probably would have cut prices and shelved plans for the coal plants anyway — even without the buyout. The study concluded that ratepayers would eventually see higher bills and that the “the buyout of TXU provides no inherent benefits to the customer.”

Sen. Fraser feared as much and so drafted Senate Bill 896 that expressly granted the PUC authority to ensure the transaction was in the public interest. By mid-May, however, it was increasingly clear that that change in law — as well as any other legislation that was seriously opposed by TXU and KKR — would not survive the session.

Energy companies typically employ plenty of lobbyists, but in 2007, with the buyout at stake, they deployed a vast army of them. According to one report TXU and its buyout partners spent \$6 million for lobbyists, \$11 million for advertising and \$200,000 for legislative gifts. That figure was about twice what TXU had said it planned to spend before the announcement.

The price of energy on the spot market more than doubled in September 2007, as compared to the price during the same month in 2006, according to an ERCOT report.

Under intense lobby pressure, Senate Bill 482 was killed May 27 on the House floor. Senate Bill 483 died during the waning days of the session after House and Senate negotiators failed to come up with a compromise.

System Benefit Fund provides some assistance to low-income Texans

Low-income ratepayers did, however, get one small bit of good news. The System Benefit Fund had been financed through what is typically a \$1 average fee on electric bills. It was created as part of SB 7 to finance discounts for low-income residents. Previous legislatures had raided the fund mercilessly, using the money for budget balancing purposes. But in 2007, at the urging of state Rep. Sylvester Turner, lawmakers appropriated about \$170 million for the System Benefit Fund — meaning that it would again begin funding rate discounts for poor Texans.

However, about \$400 million in money already collected for the System Benefit Fund — plus another \$100 million that would accrue over the next two-year budget cycle — was used for budget balancing purposes.



Year: 2008 ERCOT's Over-Budget and Behind-Schedule Market Overhaul

Research released in 2008 found that deregulated market structures in Texas and elsewhere had failed to produce lower prices. A study released that September by the Technology Policy Institute, an independent Washington-based economics think tank, reviewed wholesale energy prices in ERCOT and other states that operate similar regional transmission organizations, or RTOs. These RTOs are an intrinsic feature of deregulated electricity markets.

The study demonstrated that almost without exception, wholesale electricity prices in states with RTOs had increased more steeply than in markets without them. The researchers confirmed that differences in fuel costs and “start-up jitters” in newly deregulated markets could not explain the differences. Many deregulation proponents had pointed to both factors as possible explanations for higher prices in deregulated markets relative to regulated ones. “Our results show that RTO membership is consistently related to higher average wholesale electricity prices,” the authors determined. “With the exception of (New England), RTOs have failed to deliver lower wholesale electricity prices.”

...the research shows that even by this measure, deregulation is missing the mark in Texas. The study reported that there were 58 electricity wholesalers in 1999, but only 46 in 2006.

Moreover, the authors found that the move to RTO-based retail competition had led to less wholesale competition, not more. Many proponents of deregulation have pointed to an increase in market competitors as evidence of success. But the research showed that even by this measure, deregulation was missing the mark. In Texas, for instance, the study reported there were 58 electricity wholesalers in 1999, but only 46 in 2006.

“There appears to be much more work still to do before the promise of competition is realized in areas that currently have organized wholesale markets,” the authors concluded. “Regulators in regions still served by traditional markets would do well to wait for the results of these efforts to be evaluated before moving to develop and implement new RTOs.”

PRICES SPIKES CONTINUE DURING TIMES OF SYSTEM STRESS

And as if to confirm those findings, wholesale prices in ERCOT spiked to unprecedented levels in 2008. Generation companies were prohibited by PUC rules from offering to sell their power into the spot market at prices above \$2,250 per megawatt-hour. But on several occasions prices in the spot market hit that cap and even exceeded it. According to reports, the balancing energy price topped \$3,800 per megawatt-hour in the Houston area on April 25th, and \$3,460 and \$4,233 in Houston and South Texas respectively on May 23rd.

That spot market electricity was selling for such astronomical high prices (this is electricity that generally sells for less than \$100 per megawatt-hour) was due to a quirk in ERCOT’s pricing rules. Although generation companies could not offer their electricity for more than \$2,250 per megawatt hour, there was no prohibition against them receiving more than that price. And under certain circumstances ERCOT’s market rules produced such above-the-offer-cap prices.

ERCOT blamed several days of high temperatures and the loss of a number of plants and power lines, which were down for maintenance. “All of these factors contributed to higher wholesale prices during the spring,” the PUC reported in its 2009 Scope of Competition Report. And while isolated to a relatively small portion of the market, such dramatic price spikes do not occur without repercussions. In 2008 they contributed to failures of five retail electric providers, and, as a result, thousands of Texans served by those retailers ended up getting dumped to high-cost Provider Of Last Resort service. Customers harmed in this way had taken action recommended by members of the Texas Public Utility Commission and deregulation proponents: they had shopped around in the open market and selected

The GE Study

Under the Competitive Renewable Energy Zone (CREZ) process, the Texas Public Utility Commission delineated various geographical regions for multi-billion dollar transmission construction to support wind generation. As part of the CREZ process, ERCOT hired General Electric to conduct a cost-benefit and reliability analysis to determine the amount of transmission to build. The GE study was largely glowing, with the company claiming that system reliability would not suffer with the addition of another 15,000 megawatts of wind power. GE said the new wind generation would reduce market prices. Those supporting the transmission build-out cited the report often. But the study had various problems. For instance, the company did not account for the extra payments that would have to be made to gas generators that must stand ready to provide back-up power when the wind stops blowing. GE also declined to release the background data and assumptions used in its computer models.

Another point lost on many was that GE, as the nation's largest manufacturer of wind turbines, had a very large financial stake in Texas going forward with the Competitive Renewable Energy Zone process. This is because GE had entered into contracts with wind developers doing business in Texas, including T. Boone Pickens, whose Mesa Power had ordered 667 turbines from the company at a cost of \$2 billion. GE also had a \$300 million equity investment in Horizon Wind Energy, a leading proponent of one of the CREZ transmission scenarios considered by the PUC. For more about wind power, see Appendix F.

a competitive electric provider. But as a consequence of getting forced onto provider-of-last-resort service, many reported a doubling or tripling of the prices on their bills.

Former state Rep. Steve Wolens, one of the co-authors of Senate Bill 7, was among those getting service from a competitive electric provider that failed in 2008. Mr. Wolens said he checked with the PUC after his company closed and was told not to pay his last bill. He ended up getting turned over to a collection agency.

Given his role in creating the restructured market, Wolens said: "It serves me right. I'm getting my just desserts."

The Texas Public Utility Commission held emergency meetings in which they called for changes in market rules and more customer protections relating to Provider Of Last Resort service. The proposed changes included requirements for higher capitalization standards for Retail Electric Providers and additional security for customer deposits to prevent their loss in the case of a company default.

Reliant Energy, one of the state's largest electric retailers, also announced in October 2008 that it was looking for a buyer.

MARKET "WATCHDOG" REPORTS PRICES ARE TOO LOW

Despite the clamor about high bills, a key regulatory advisor explicitly called for new rules that would not result in lower prices, but higher ones.

In a report from August, the consultant hired to serve as the Independent Market Monitor recommended the use of mechanisms that would artificially increase wholesale prices. "More reliable and efficient shortage pricing could be achieved by establishing pricing rules that automatically produce scarcity level prices when defined shortage conditions exist on the system," he stated in the report. In other words, the consultant called for new rules that would create wholesale price spikes.

The consultant, Potomac Economics of Delaware, was hired at the behest of the Texas Legislature in 2005 as an independent market watchdog. The consultant's findings

carry considerable weight with ERCOT and especially with the Texas Public Utility Commission, where commissioners have echoed many of the same concerns.

This proposal for higher prices was in no way an anomaly for Potomac. In annual reports from both 2007 and 2008, Potomac concluded that without higher prices — and especially without higher prices during periods when power supplies run short — generators won't make enough money to invest in new construction.

The market monitor likewise concluded that the reason there aren't more spikes is because there's already too much generation. That is, the market monitor asserted that generation reserves were too high, which puts downward pressure on prices, which prevents companies from making enough money to build more generation. He said that the market needs to support the creation of more generation, but it can't because it already has too much generation.

The ERCOT "watchdog" did not express concern that price spikes of 2,000 percent that occurred in March of 2008 caused harm to consumers, but rather concern that there were not similar price spikes during an earlier period of scarcity.

The cap on wholesale prices in ERCOT's balancing energy market stood then at \$2,250 per megawatt-hour, which was already more than twice the level of similar caps in other states and represented a price more than 20 times greater than typical energy prices. Generators had received that much for their power on numerous occasions, and stood to receive even more when the cap eventually went to \$3,000 in 2011.

MARKET ABUSE?

In November, Luminant — formerly TXU — agreed to pay a \$15 million penalty for alleged abuses in the wholesale market. While the \$15 million penalty is one of the largest paid by a generator, the PUC had originally recommended penalties of more than \$200 million. The PUC's own investigation found evidence that the company had profited by nearly \$20 million through its improper activities and that the company's actions had cost the market at least \$57 million.

"Settling for pennies on the dollar just reinforces the belief that the PUC is unwilling or unable to stand up to electric companies," said Tim Morstad, a policy analyst for the AARP.

THE NODAL MARKET: OVER PROMISED, OVER BUDGET AND BEHIND SCHEDULE

PUC commissioners and some industry representatives said an ambitious overhaul of the wholesale market would cure many of the problems. Supporters said the new market design — known as a "nodal" or "marginal locational pricing" market (see pages 53-54) — would reduce or eliminate gaming opportunities and produce incentives to build generation where it is needed most.

In a report from August, the consultant hired to serve as the Independent Market Monitor recommended changes that would artificially increase wholesale prices.

The PUC initially authorized nodal in 2003, and expected to have it up and running by the fall of 2006. But that deadline came and went. The next deadline for the end of 2008 was also abandoned. Then, on the day before Thanksgiving, ERCOT announced that the project wouldn't be ready until at least the end of 2010, and estimated its cost at a whopping \$660 million. That was more than double the size of ERCOT's last estimate and far in excess of initial cost estimates for ERCOT of less than \$100 million.

"It's exceptionally disturbing," said Rep. Phil King, R-Weatherford, chairman of the House Regulated Industries Committee. "I don't want to see us strap \$660 million on Texas consumers unless the savings exceed that."

The new system is supposed to make the market more efficient by changing the assignment of wholesale costs associated with line congestion. That is, when complete, customers in the zones with the most congestion (where the demand for power outstrips the supply of available transmission lines) likely will end up paying more than they would under the old system.

A cost-benefit analysis commissioned by the PUC found that consumers would save \$5.6 billion in wholesale power costs during the first 10 years of the nodal system.

...wind power is so unstable that ERCOT would only factor in only 9 percent of total available wind capacity when determining available power during summer peak hours.

The Boston-based consulting firm, CRA International, said those savings did not reflect a system-wide benefit, but rather a “transfer of wealth” from generators to consumers. Generators have been among the greatest advocates of the market overhaul.

A separate report commissioned by a coalition of West Texas and North Texas cities found that incorrect and speculative assumptions in the CRA report led to a massive over-estimation of benefits for consumers. The cities found that flaws in the CRA report were so pervasive as to call into question its conclusion that the nodal market would benefit consumers.

Also a report by the American Public Power Association (APPA) found that proponents had oversold the benefits of nodal, and that similar markets elsewhere had not worked particularly well in practice. The APPA noted, for instance, that customers living in the Northeast had not realized any cost savings from a nodal system there. It also noted that implementing such a system does not guarantee competitive markets or prevent market abuse. Nor does a nodal market provide incentives for investment in some areas with the most overburdened power lines. (For more about the nodal project, see pages 53-54.)

SYSTEM RELIABILITY AND WIND POWER

On February 26, 2008, ERCOT officials took emergency action to avoid blackouts. A sudden loss in wind power, coupled with other factors, sent grid operators scrambling. “This situation means that there is a heightened risk of ... regular customers being dropped through rotating outages, but that would occur only if further contingencies occur,

and only as a last resort to avoid the risk of a complete blackout,” the state’s command center for disasters stated in an e-mail notice to municipalities.

It was a serious emergency for ERCOT, and one that illustrated the inherent challenges associated with wind power. Kent Saathoff, ERCOT’s vice president for system operations, said because wind doesn’t give advance notice before it stops blowing, grid engineers must remain nimble enough to respond quickly with replacement power. Otherwise, blackouts occur.

That fickle nature of wind also means the state cannot forego building other sorts of generators — more polluting ones — to provide replacement power. Those generators have to remain on standby and ready to ramp up quickly. That’s an extra expense to the system. In fact, wind power is so unstable that ERCOT would only factor in 9 percent of total available wind capacity when determining available power during summer peak hours.

In its 2009 Scope of Competition report, the PUC suggested that wind generation has suppressed electric wholesale and retail prices. As evidence, it cited findings by the Independent Market Monitor that correlated wholesale prices on the one hand, and wind production, system load and fuel prices on the other.

The monitor said that for each additional 1,000 megawatts of wind power produced, the clearing price in the balancing energy market fell by \$2.38.

However, that analysis didn’t appear to tell the whole story. For instance, the calculation of balancing energy savings did not account for the multi-billion dollar expense of building new transmission. Neither did it account for the increased cost of purchasing additional backup capacity, known in ERCOT as “ancillary services.” ERCOT also has found separately that wind is one of the most expensive forms of power commonly used in Texas, with each megawatt of power costing \$53 to generate. And if one figures in its actual operating capacity, then the cost of wind power goes to \$80 per megawatt hour.

The U.S. Department of Energy showed that the most expensive form of power generation through 2030 will come from wind generators. It remains competitive as an energy source only because of government subsidies. For

every \$100 million of investment, wind-power developers receive more than \$74 million in federal tax credits and other benefits, according to a study from the University of North Texas. Wind developers receive corporate income tax breaks from the state and property tax abatements from local governments.

A quick review of the PowerToChoose website shows that plans that focus on wind energy typically sell at a premium. Wind power is more expensive for residential ratepayers, not less.

The Houston Chronicle, in an analysis from July, called wind power “an open trough of government subsidies, tax credits and state mandates.” The newspaper described the sponsorship of wind in Texas “a massive corporate welfare effort that means big money for the wind-power developers and big costs for the rest of us.”

CREZ ZONES

The wind industry has grown exponentially in Texas. By 2008, Texas had nearly 7,000 megawatts of installed generation capacity which far exceeded that which exists in most other states, and even many nations.

Texas was also planning through its Competitive Renewable Energy Zone process to construct enough new transmission lines to West Texas and the Panhandle for nearly 18,500 megawatts of additional wind generation. The PUC estimated the cost of building those lines at \$5 billion — a rather startling figure considering that the entire investment of the existing statewide transmission system then stood at only about \$10 billion.

And while West Texans and residents of the Panhandle could clearly reap the benefits of economic development from that construction, ratepayers statewide would foot the bill. By some estimates, the new construction would cost typical Texas residents around \$75 per year. The Commission expected the new lines in service within four to five years. (For more about the CREZ transmission lines and wind power in Texas, see Appendix F.)

PROVIDERS AND PRICES

By July 2008 about 44 percent of Texans had switched to electric service other than that offered by the old legacy providers like TXU. By comparison, only 14.3 percent of New Yorkers had switched in that state by the end of 2007. “Though retail competition exists in a number of other states, including New York, Michigan, Illinois and several New England states, few REPs have attempted to compete for residential customers in those states and few residential customers have switched or changed providers,” the PUC reported in its 2009 Scope of Competition Report.

The same report noted that as of September 29, a customer visiting the state’s PowerToChoose would find as many as 27 competitive retail electric providers in areas of Texas with deregulated retail electricity markets. It noted that these REPs offered 96 different plans in those various territories — including 23 different renewable energy options.

The PUC said that this large number of competitors is an important indicator of success for the state’s deregulated system. “The number of REPs has increased steadily since 2002,” the report stated. “Residential customers have at least 50 percent more options than they did at the end of 2006.”

That switching activity, however, had not translated into lower prices. A survey by the Texas Coalition of Cities For Utility Issues in 2008 found that north Texans could shop around all they like — that is, they could switch to the very best deal in their area — and still not find more affordable electricity than that offered by municipally-owned utilities, cooperatives and Texas investor-owned utilities outside competition.

The report considered all the best competitive offers in North Texas, and compared those prices to electric providers outside deregulation. The seven lowest rates in the survey were offered by providers outside competition. The average of typical monthly bills under competition was higher than the bill averages for customers in municipally-owned utilities, cooperatives and investor-owned utilities outside competition.

Noted the report: “Clearly, nothing about a deregulated system inherently drives prices lower than a non-competitive system. Otherwise, one might expect most — if not all — of the ten lowest rates in the survey to be offered by competitive REPs.”

POWER AGGREGATION

In 2008 a group of six West Texas cities located in deregulated areas of the state tried and failed to use a bulk purchasing strategy in order to lower rates for their constituents.

The strategy, known as opt-in aggregation, is explicitly authorized by Senate Bill 7. However, as the cities of Cisco, Comanche, Dublin, Eastland, Hamilton and Snyder discovered in 2008, the aggregation provision in the law doesn't work particularly well in practice.

The cities managed to sign up 1,600 households during an extensive outreach program and then attempted to negotiate a bulk rate power deal on their behalf. But citing the relatively small number of customers, electric providers either decided not to participate or would not offer prices lower than those already advertised on a website operated by the Texas Public Utility Commission.

Organizers of the bulk rate effort concluded that they would have been more successful using another bulk rate purchasing strategy, known as opt-out aggregation. However, opt-out aggregation is not permitted under Senate Bill 7 (see Appendix A).

Opt-Out Aggregation

Many experts – including those at the Texas Public Utility Commission – report that consumers have saved money in states that permit a purchasing strategy known as “opt-out aggregation.” But while an unambiguous success in other deregulated markets, opt-out aggregation is not available to consumers in Texas.

What is opt-out aggregation? In the simplest terms, it is a method that cities, counties or other political subdivisions deploy to purchase affordable power, in bulk, on behalf of their constituents. Under typical opt-out programs, the city council authorizes the aggregation of the residents' power needs through a public hearing and vote. Once approved, the political subdivision then mails notices to ratepayers advising them of the new energy aggregation program. Citizens who do not wish to participate in the program can check a box on the advisory and send it back, or can contact program organizers via the Internet or telephone. Those ratepayers who choose to participate need not take any further action at all. If the ratepayer doesn't respond within a given timeframe, it is assumed they want to participate and the political subdivision will negotiate a bulk-rate electricity deal on their behalf.

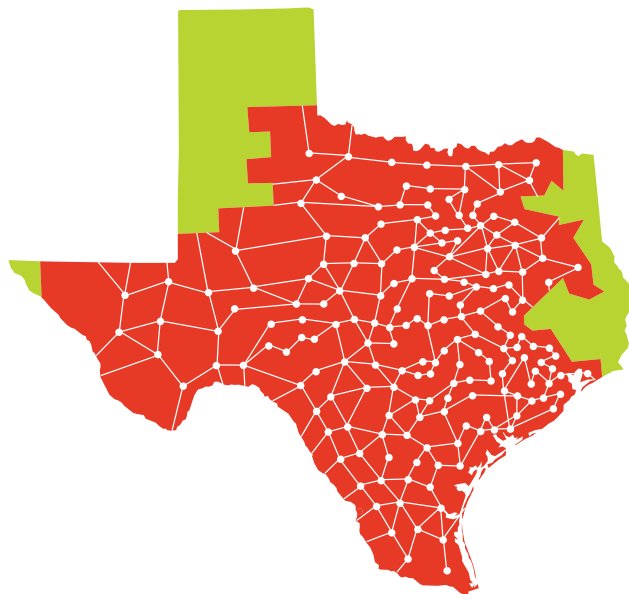
This is in contrast to opt-in aggregation, which is explicitly authorized by Senate Bill 7. Under opt-in aggregation, citizens must affirmatively sign up for service before their political subdivision will begin negotiations on their behalf. But opt-in aggregation creates an untenable conflict because large numbers of customers typically won't sign up for service unless they know how much money they will save, and retail electric providers won't

offer substantial savings unless they have a reliable estimate of customers and the power to serve them.

A group of six West Texas cities tried and failed to use opt-in aggregation in 2007 and 2008. About 1,600 households in the cities of Cisco, Comanche, Dublin, Eastland, Hamilton and Snyder (in largely rural West Texas) agreed to participate after being contacted by their cities' representatives through a long, extensive and costly outreach program. Most of the residents had never before negotiated electric contracts and many expressed enthusiasm about the sense of empowerment they received from the program. Their city representatives then attempted to negotiate a bulk rate deal. But competitive electric providers — some noting the relatively small number of residential participants — either declined to submit bids to serve them or would not beat the lowest prices already advertised on a website operated by the Texas Public Utility Commission.

A study by the National Center for Appropriate Technology describes opt-out aggregation programs in states other than Texas as one of the few bright spots for consumers under electric deregulation. In Ohio and Massachusetts, opt-out aggregation programs clearly led to lower prices, the study concluded. The Texas Public Utility Commission likewise has acknowledged the success of opt-out aggregation programs and has suggested the creation of an opt-out aggregation in Texas as a way of enhancing the competitive market. However, proposals to allow opt-out aggregation programs in Texas have been rejected by the state legislature.

What is Nodal?



Power lines can handle only so much electricity without overheating. This can become a problem when lines get congested, that is — when there is too much power and too few power lines. Under the system in place in 2008, ERCOT managed congestion by paying generators to ramp up or ramp down production during peak energy-use periods. ERCOT then determined the extra cost for this congestion management, and assigned the expense to those entities that purchase electricity in the wholesale market. However, the prices paid for congestion management were not assessed in a uniform fashion across the state, but rather varied by large areas within the state, known as zones.

This differed from a nodal market, which assigns costs in a more granular fashion. ERCOT and the Texas Public Utility Commission decided to replace the old zonal market with a nodal structure in the theory that it would reduce the overall cost of grid operations. Under nodal, ERCOT has the ability to charge entities responsible for “creating” congestion — that is, those that demanded more power than can be supplied over transmission lines in their area — and then re-allocate the money it collects to generators that relieve the congestion. This means that the new nodal market is designed to increase revenues to some market

participants, like certain generators, while increasing costs to some entities that buy power.

Using a bank of computers and complicated software, the new system spits out rapid-fire calculations for electricity prices. The computers calculate these prices at thousands of points on the transmission grid, or “nodes”, where power is either added or removed by wholesalers or users. The computerized nodal system also gives ERCOT the ability to model electricity demand and the ability to manage a trading system similar to those operated by eBay, which, in theory, will improve ERCOT’s energy-management system to help guard against outages. It is claimed that the new technical systems also will improve ERCOT’s ability to collect and aggregate technical data, which can help the organization guard against market abuses.

QUESTIONS REMAIN

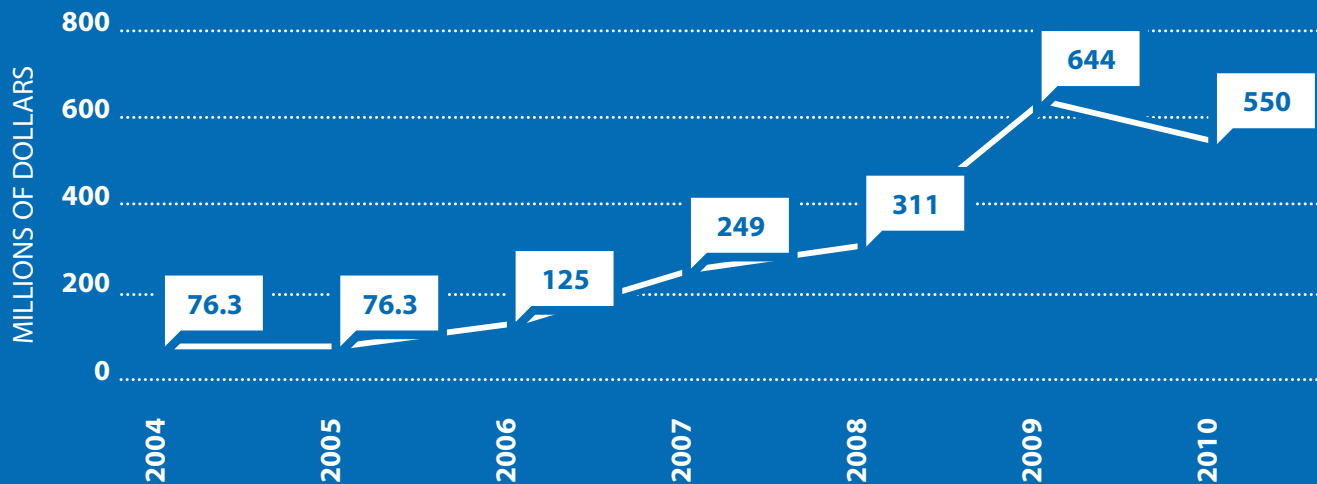
However, the PUC and ERCOT could have ordered many of the improvements now associated with the new nodal system without ever having gone forward with it. For instance, there is nothing “inherently nodal” with collecting and aggregating technical data. Also, the entire nodal system was proposed as a way of reducing congestion costs, but ERCOT’s independent market monitor reported that congestion costs had already come down — from a high of about \$275 million in 2004 to \$186 million in 2008. This was probably the consequence of new strategies ERCOT employed for dealing with overburdened lines, and with the construction of new lines by utilities — not from a new-fangled nodal system.

And no one ever suggested that the nodal system will completely eliminate congestion costs.

Given the stunning expense and budget overruns, some questioned whether nodal was worth the trouble. The project once projected to cost less than \$76.3 million ended up costing more than \$500 million.

Nodal Project Final Costs Exceed Original Estimates By More Than 600 Percent

Source: ERCOT, "Nodal Timeline and Budget History," January 2011; Tabors, Caramanis, & Associates and KEMA Consulting, "Market Restructuring Cost-Benefit Analysis: Final Report," November 30th, 2004



An initial analysis commissioned by the Texas Public Utility Commission put the cost to ERCOT of transitioning from a zonal market to a nodal market at between \$59.7 million and \$76.3 million. The cost estimate eventually increased to \$311 million, and by 2010 grew to \$550 million.

Year: 2009 The 81st Texas Legislature

Residential electricity prices in Texas were down in 2009 compared to the previous year. Although this was good news for consumers, a look behind the numbers showed that the market was underperforming. Consider, for example, the difference in average prices for Texans living inside and outside deregulated areas. Residential electricity prices dropped by 3.1 percent between 2008 and 2009 for Texans inside deregulated areas of the state, but dropped more than twice that much for customers in areas outside deregulation. The declines in both areas were largely related to drops in the price of natural gas, which fuel many power plants in Texas. The regulated areas of Texas responded much more nimbly than the deregulated areas because regulatory policy mandates that actual fuel costs be passed through to ratepayers, while REPs who serve ratepayers in deregulated areas mark up their purchases from wholesale suppliers.

...the research shows that even by this measure, deregulation is missing the mark in Texas. The study reported that there were 58 electricity wholesalers in 1999, but only 46 in 2006.

Also, despite the short-term pricing drops, Texans in 2009 under deregulation continued paying more than the national average for electricity. This disparity was in contrast to a long history of below-national-average prices before the adoption of the retail deregulation law, and in contrast to the below-average rates paid by Texans who resided in areas exempted from deregulation. These disparities were evidence that the market switch-over had yet to meaningfully benefit consumers. A survey of 21 major U.S. cities released in early 2009 also revealed that residents of Houston and Dallas were getting stuck with some of the highest electric bills in the nation. The survey found that summertime electricity bills in Houston and Dallas even exceeded those in scorching hot Las Vegas and Phoenix

and surpassed those in northern cities like New York and Chicago during the winter months.

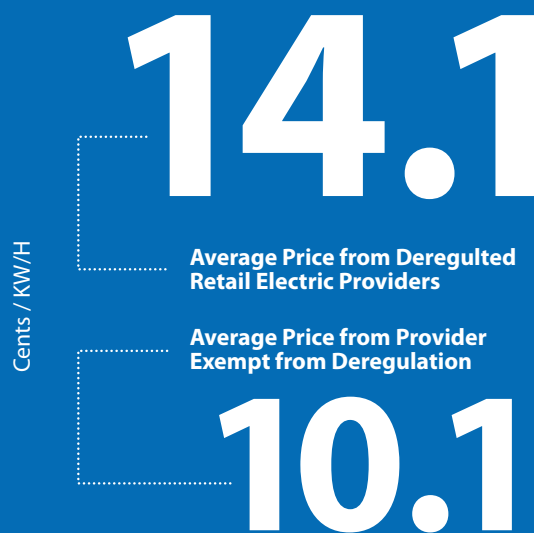
THE TEXAS LEGISLATURE CONVENES

Lawmakers in 2009 convened for the 81st regular session of the Texas Legislature, the fifth since the state adopted Senate Bill 7 and the third since the opening of the restructured market. Electric prices in Texas had for the

**Electricity \$488
more expensive in
2009 for Texans under
deregulated system***

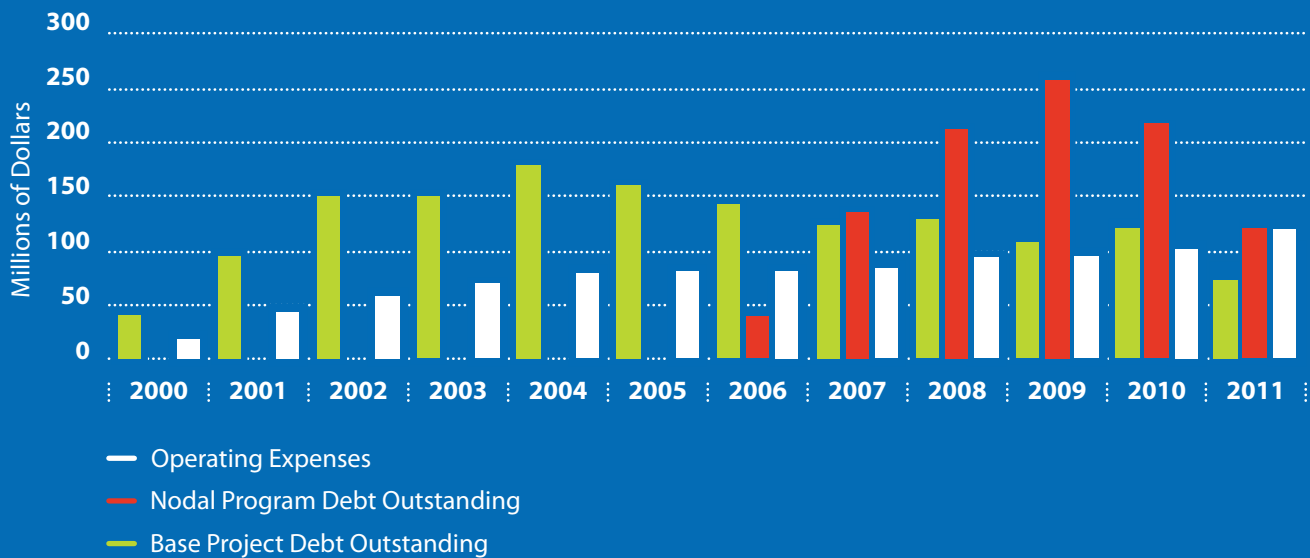
*Analysis compares average prices in areas of Texas inside and outside deregulation, and assumes 1,300 kw/h monthly usage.

Source: US EIA, <http://www.eia.gov/cneaf/electricity/p>



Growth of ERCOT Debt and Operating Expenses

Source: ERCOT



Much of the debt incurred by ERCOT since 2006 is the result of the nodal project, which consistently ran over budget. The organization's overall outstanding debt has declined in recent years. ERCOT's operating expenses have gone up. For more about ERCOT, see Appendix E.

most part increased during the intervening years, as had problems relating to electric restructuring in general. But the legislature had declined to make significant changes in the market's structure. There was some indication that the 81st session would prove to be different — especially after lawmakers began promoting reform bills such as those to encourage competition by generators and those that would give the PUC greater authority to assess fines in market manipulation cases. Some of the pro-consumer bills were pegged to an AARP study showing that with more market transparency, Texas electric consumers could potentially save nearly \$1 billion annually — or more than \$50 per year for the average household. There were also bills that would have required a top-to-bottom review of

ERCOT's operations and management, and to overhaul its board structure.

Other promising pieces of legislation included House Bill 2781, by state Rep. Jim Keffer, and SB 1481, also by Sen. Wendy Davis. HB 2781 would have ended ERCOT's efforts to implement a dubious wholesale electricity pricing system, known as the nodal project. The project was over-budget and behind schedule. Senate Bill 1481 would have facilitated the use of bulk electricity purchasing by cities on behalf of their citizens in order to help reduce their energy bills.

But unfortunately, it would not be these bills that would win the day, but rather Senate Bill 769, which would tend to increase energy bills. Under SB 769, utilities were granted

authority to more quickly add extra charges onto home bills to help defray costs associated with disastrous weather. Regulated transmission utilities could obtain these rate hikes without the full scrutiny of a traditional rate case. That is, SB 769 partially deregulated the monopoly part of the energy business in Texas. Houston's CenterPoint Energy was a leading proponent of SB 769, and a day after the bill became law, the company filed a request at the PUC for a nearly \$678 million rate hike.

One of the few bright spots for consumers was Senate Bill 2. This was not an energy bill per se, but rather a bill related to the legislative Sunset Advisory Commission that oversees the effectiveness of government agencies. An amendment added to SB 2 required ERCOT to come under special review by the Sunset Commission in 2010, and the conclusions of that review would then form the basis of ERCOT-related legislation in 2011. Lawmakers in 2009 also adopted House Bill 1783, by state Rep. Burt Solomons, requiring ERCOT to broadcast its board meetings on the Internet; and House Bill 1799, by state Rep. Dwayne Bohac, requiring retail electric providers to include on each residential customer's bill a statement directing the consumer to the powertochoose website, where they can find information regarding electric service options.

THE NODAL PROJECT

The PUC in 2009 authorized another request from ERCOT to spend even more money on the nodal project. The new price tag: \$644 million, or about eight times the original cost estimate. The new spending plan also included \$58.6 million for "discretionary" spending and \$77.7 million for financing costs. Just the discretionary spending and financing costs alone were close to equaling the original cost estimate in 2004 for the entire nodal project. The cost overruns may have contributed to a decision by ERCOT CEO Bob Kahn to quit the job. Kahn announced his resignation in September 2009 after two years in charge of the organization. The CEO had been heavily criticized by key lawmakers, including members of the Senate Business and Commerce Committee. He was ERCOT's fourth CEO since 2000.

TEXAS SURPASSES ENERGY RECORDS

Texas energy consumption continued to increase during 2009, with the state hitting new records of 62,339 mega-

watts on July 8 and 62,786 megawatts on July 13. As a result of the high summertime use of air conditioning and the unexpected outages of power plants, ERCOT declared an emergency alert on July 8 in which they called upon Texans to conserve energy. Wholesale electricity spot market prices shot up July 8 to \$500 per megawatt-hour, which was far above the then-prevailing spot market prices and more than 50 times higher than the lowest retail electric rates at the time.

Texas surpassed another record on the evening of October 28, 2009. At precisely 8:19 p.m. Texas wind generators hit the 6,223-megawatt mark, which was the most wind power ever produced and successfully absorbed by the ERCOT grid. Wind power accounted for about 17.5 percent of all energy flowing across the grid at that time. Earlier in the evening, wind power had accounted for an even greater proportion of total load — about 25 percent.

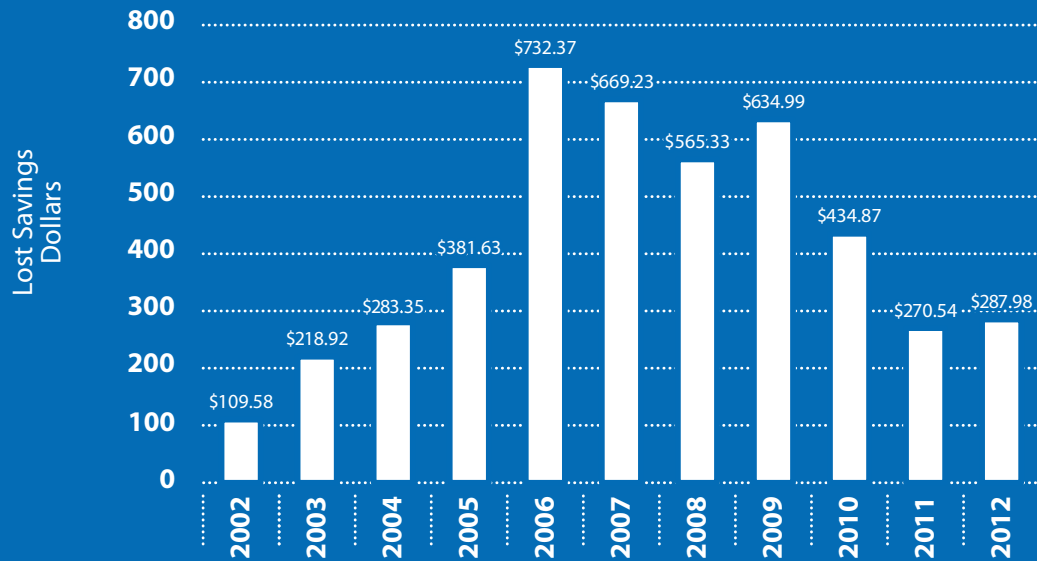
WIND GENERATION CHALLENGES

The increased development of wind power in the Lone Star State attracted the attention of Federal Energy Regulatory Commission (FERC) Chairman Jon Wellinghoff, who said policymakers should consider linking the ERCOT grid to other states. "If Texas could be more strongly interconnected to the Midwest, for example, they could integrate even more wind into the system," said Wellinghoff. The ERCOT power grid is wholly located within the boundaries of Texas and has very limited connections with outside grids, which makes it free from most federal oversight. Wellinghoff said that he understood the concern of many Texas policymakers that more connections could lead to federal control of ERCOT, but he insisted that such a takeover was not FERC's intention.

Also in 2009, Texas billionaire oilman T. Boone Pickens announced his intention to scale back his much publicized plans to build the world's largest wind farm in Texas. Part of the problem was the drop in natural gas prices, he said. In an interview with the *Dallas Morning News*, Pickens said that he had already ordered an initial round of wind turbines (from his plan to purchase nearly 700 from GE), and that officials with his Mesa Energy were considering locating them in various sites in addition to Texas — including Wisconsin, Oklahoma and Kansas.

More than \$4,500 in Lost Savings*

Source: United States Energy Information Administration



*Analysis compares electricity costs for a typical customer paying average rates charged by deregulated retail electric providers in Texas, to costs for a customer with same usage but paying average rates charged by Texas providers exempt from deregulation.

Year: 2010 Nodal Project Goes Live

WHOLESALE ENERGY PRICES

According to data collected by the federal government, residential customers in Texas paid, on average, 11 percent less for electricity than they paid in 2008. The decline corresponded to a similar drop in the price of natural gas, which fuels many of the state's power plants. Overall, residential prices remained at about the same level as the national average in 2010. This was a welcome change from nearly a decade of prices above the national average since the implementation of deregulation.

But it also became clear in 2010 that the state's largest electric provider depended upon these higher rates for its financial well-being. Energy Future Holdings had taken on a massive amount of debt in 2007 to acquire TXU Corp., the state's largest electric company, and the lower wholesale electricity prices were making it difficult to pay off that debt. In August, after EFH finalized plans to pay some lenders between 72 cents and 79 cents on the dollar, the company suffered a downgrade from all three debt-rating agencies. In October, the company's debt was downgraded again. "EFH is likely to remain in financial distress," wrote analyst Jim Hempstead, on behalf of Moody's Investors Services.

And while electricity prices may have declined over the short term, that did not change the fact that they were up more than 50 percent since the adoption of the retail deregulation law. Between 1999 (the year that Texas lawmakers adopted the deregulation law) and about the midway point of 2010, the percentage increase in electricity prices in Texas had outpaced increases in all but eight states. Electricity price increases also outpaced those in most other deregulated states. Electricity prices in Texas remained higher than prices in neighboring states, including those relying heavily upon natural gas to fuel generating plants.

These higher prices meant that Texans had less to spend on other priorities. An analysis of federal data showed that Texas residential consumers could have saved more than \$11 billion through 2010 had their electric prices remained more consistent with pre-deregulation levels. When higher electricity prices paid by commercial and

PUC's "Guard Rails"

New "guard rails" ordered by the PUC capped wholesale spot energy prices during the first 45 days of the new nodal market. These "guard rails" limited offers in this energy market to \$185 per megawatt/hour, or a multiplier related to the price of natural gas. The temporary guard rails were largely favored by market participants, many of whom recalled the punishing price spikes of 2001 and 2002 during the initial transition to deregulation. Even greater price spikes in 2008 drove five retail electric providers into bankruptcy.

Upon the expiration of the guard rails in early 2011, a new \$3,000 per megawatt/hour offer cap would come into place. Although intended to protect against price gouging, this new cap nonetheless allowed electric companies to seek prices about 60 times higher than those typically paid in the market. The cap also was three times higher than those in other states.

industrial customers were factored in, the lost savings amounted to \$16.4 billion.

ERCOT

A consultant's report in June 2010, found evidence of "poor corporate governance, leadership and culture" at ERCOT, the organization that operates the Texas power grid. Citing the "overall below-average quality of people" employed there, the consultants recommended 166 staff cuts, or about 24 percent of the organization's personnel. Shortly afterwards ERCOT eliminated 37 positions, reductions that ERCOT President Trip Doggett said were part of the expected transition to the nodal market. The layoffs were fewer than those recommended by the consultants, but still amounted to about 5.5 percent of the organization's workforce.

In a separate report released in April, staffers for a key legislative committee concluded that ERCOT lacked sufficient financial oversight. Issued on behalf of the Sunset Advisory Commission, the report noted that ERCOT's debt had ballooned from \$40 million in 2000 to more than \$360 million in 2009. It also questioned the wisdom of ERCOT's borrowing, citing specifically some of ERCOT's older debt that required a 14-year payout even though the underlying assets were in use for only three to five years. The Sunset staff recommended that ERCOT's annual budgets and borrowing become subject to PUC approval, and that ERCOT remove self-interested industry representatives from its board of directors. Some of these recommendations would become the subject of proposed legislation in 2011.

NODAL PROJECT STATUS

ERCOT certified late in 2010 that the nodal system was finally ready to go live. (For an explanation of nodal, see pages 53-54.) ERCOT's engineers had conducted months of technical trials, including one lasting 168 hours. Although they continued to identify problems, the engineers determined none were significant enough to prevent easing forward with a partial "soft launch" on November 15, and then going completely live with the nodal systems on December 1. The final price tag remained a source of displeasure for many. Including interest, the nodal project would end up costing Texas electricity customers nearly \$536.5 million — or more than five times more than original estimates. The project was years behind schedule. "There were times, two and three years ago, when I did not think this was going to happen — and I'm still concerned about the cost," then-PUC Chairman Barry Smitherman said shortly after the launch.

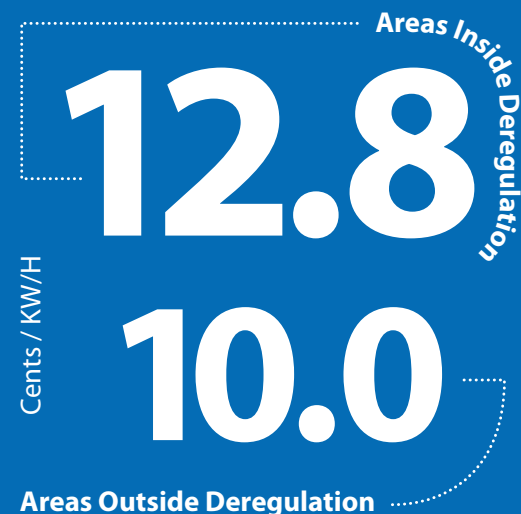
Anticipating glitches, ERCOT set aside an additional \$25 million to make early fixes. Several electric retailers also added language to customer contracts allowing for extra nodal-related surcharges should the system go awry. The PUC agreed to temporary "guard rails" in the wholesale market to guard against unintended price spikes (See sidebar on opposite page). For the most part, however, the new systems became operational without incident.

Average Residential Electricity Prices, 2010

AREAS OF TEXAS INSIDE AND OUTSIDE DEREGULATION*

**Providers exempt from deregulation include municipally-owned utilities, electric cooperatives and investor owned utilities outside of ERCOT.*

Source: United States Energy Information Administration



As was the case during every year since 2002, average electricity prices in deregulated areas of the state in 2010 were higher than average electricity prices in areas of the state exempt from deregulation.

Year: 2011 The PUC Under Sunset Review

THE 82ND LEGISLATIVE SESSION

The Texas Legislature's 82nd regular session, the fifth since the deregulation of the state's retail electricity markets, convened on January 11, 2011. Although electricity prices and complaints had fallen in recent years, they nonetheless remained above pre-deregulation levels.¹ (For more about complaints, see Appendix B). Flaws in the state's wholesale energy market also remained uncorrected. Consumer groups hoped that lawmakers in 2011 would finally order reforms. The electric power industry either worked to maintain the status quo, or pushed for changes that would reduce regulatory oversight of their monopolistic transmission and distribution rates.

The single most anticipated piece of energy legislation was Senate Bill 661, which grew out of 2010 recommendations from the staff of the Sunset Advisory Commission. SB 661 included the Commission's reform proposals for the Texas Public Utility Commission, the Electric Reliability Council of Texas, and, to a lesser degree, the Office of Public Utility Counsel, which is a state agency charged with consumer oversight.²

If it had been adopted, SB 661 would have directed the PUC to exercise more fiscal oversight of ERCOT and would have required ERCOT to obtain approval from the PUC before borrowing money. Additionally, the legislation would have authorized the PUC to assess greater fines against electric companies that endanger grid reliability and also to issue emergency cease-and-desist orders against companies suspected of engaging in improper conduct.³ Each of these proposed reforms were included in the Sunset staff report and were supported by consumer groups. On balance SB 661 was useful legislation — a bill that could have made some beneficial tweaks to the system. However it fell victim to an 11th-hour technical objection raised on the House floor.

Other helpful bills met similar fates. For instance, House Bill 1006 and Senate Bill 948 — legislation that would have required retail electric providers to offer a single standardized offer along with their other offers — did not even receive committee votes.⁴ The companion bills were

The Sunset Advisory Process in Texas

Under the Sunset process, the professional staffers assigned to the legislative Sunset Advisory Commission review state agencies, and then offer recommendations to state lawmakers. The lawmakers then vet the staff recommendations — accepting some, rejecting others — on their way to drafting legislation used to reauthorize state agencies.

intended to simplify shopping in the deregulated electricity market, but died under a heavy industry lobbying effort. Lawmakers also rejected Senate Bill 319, which would have ensured that a special fund created under Senate Bill 7 was used for its intended purpose. The fund, financed through a charge on electricity and meant to finance bill discounts for low-income ratepayers, had been used in previous years for budget-balancing purposes.

However lawmakers did manage to adopt Senate Bill 1693, which was a top legislative priority for many within the energy lobby. SB 1693 was signed by the governor on May 28.⁵ Under SB 1693, the state's transmission and distribution utilities — that is, the state's monopoly wires companies — received new authority to periodically hike rates pertaining to their distribution system without a comprehensive regulatory hearing, reversing decades of regulatory precedent. Like SB 769 from the previous legislative session, SB 1693 further benefited those electric companies that under the Texas deregulation law still retained their monopoly status. Lawmakers adopted the legislation despite warnings from consumer representatives and community leaders that it would lead to higher electric prices. "The intent of this legislation is to make it easy for electric utilities to raise rates every year with little documentation or justification," said Clifford Brown, the mayor of Corsicana.⁶

There was one legislative accomplishment for consumers in 2011, and that was the passage of House Bill 2133, by state Rep. Burt Solomons. The legislation pertained to what consumer groups had come to describe as the “rip-off loophole” in the Public Utility Regulatory Act. That is, the PUC had claimed for many years that it lacked the legal authority to order restitution payments from companies found to have engaged in anti-competitive activities.⁷ As a consequence, the state’s largest electric company made nearly \$4 million in profits in 2008 even after paying a settlement for allegedly engaging in anti-competitive behavior.⁸ The PUC and Sunset staff said this loophole should be closed. Consumer groups agreed.

The bill was not perfect. For instance, the final version of HB 2133 barred city coalitions and other consumer representatives from participating in enforcement cases. It also gave electric companies a path to avoid future prosecution under certain circumstances.⁹ But it was, on balance, helpful legislation and its adoption by the Texas Legislature marked a rare win for consumers. The governor signed the bill into law in June 2011.

RESERVE MARGINS

Grid operators and regulators often speak of “reserve margins,” which refer to the ratio between the total potential output of electricity generation within a given system and the peak electricity usage in that system. That is, reserve margins measure the relationship between how much electricity generators theoretically can produce in a single instant, to predicted highest-case demand for electricity by consumers. Because power shortfalls can put a system at risk for blackouts — especially during extreme weather events — the reserve margin measurement is a good indicator of system reliability.

During the transition into deregulation, back in 2001, the state enjoyed the highest reserve margin in the nation. This helped to calm the anxieties of some Texas lawmakers and the public after California’s market began collapsing during that state’s transition to deregulation. Recall that electric price spikes and rolling outages in California had been blamed both on a flawed deregulation law and low reserve margins. But in Texas, lawmakers were assured in 2001, we had neither of these problems. “We have the highest electricity reserve margin of any region on the entire continent,” said Pat Wood III, then the chairman of the PUC, in an attempt to reassure deregulation skeptics.¹⁰



His agency noted that Texas enjoyed excess capacity of up to 25 percent even during the hottest days of summer.¹¹

But such a claim could not be made in 2011. The National Electric Reliability Corporation reported ERCOT's reserve margin ratio in 2011 at about 14 percent, which marked a nearly 40 percent decline from pre-deregulation levels and far below the national average in 2011 of around 25 percent.¹² In fact, after 10 years of deregulation the Lone Star State possessed the lowest reserve margin in the nation, according to NERC.¹³

The Texas reserve margin dwindled during 10 years of deregulation even as electricity prices increased. Was some aspect of the deregulated system contributing to this problem? Some observers seemed to think so, especially after the state suffered reliability crises during both the summer and winter of 2011. "Consumers were told (deregulation) would lower prices, but it didn't — now, it's becoming clear that even at those prices, the deregulated market can't deliver reliable power," wrote Loren Steffy, a business columnist for the *Houston Chronicle*.¹⁴ The state's reliability challenges, wrote Steffy, exposed the "fundamental lie" of deregulation.

Dan Jones, a vice president of the consulting firm that serves as the independent monitor of the deregulated wholesale energy market, said the market was failing to produce high enough prices for certain sorts of energy. Writing in a 2011 report, Jones noted that these low prices "were insufficient to support new generation investment for any generation technology in any region of the ERCOT market."¹⁵ His proposed solution was to create a system to encourage higher prices in the wholesale power market. That is, his prescribed cure was to create a system whereby consumers would pay more. Generation companies also recommended the creation of artificial price supports as well as the creation of a "capacity market," in which they could get paid even when their generators do not operate.¹⁶

Consumer groups expressed alarm, especially given that generation owners were offering no guarantees that these artificial price supports would lead to new plant construction. "This dynamic highlights a key risk to consumers: what if a mechanism is put into place to increase wholesale prices to ensure resource adequacy, but does not work?" warned one advocate for cities.¹⁷ The proposals also raised issues of basic fairness. That is, generators pushed competition and supported it when prices were high, but

eagerly sought artificial price supports when they felt the system was failing to deliver to them sufficient profits.¹⁸ For consumers, generators were offering "a heads I win, tails you lose" vision of deregulation.

Those representing city coalitions, industrial users, and other consumer groups urged policymakers to exercise restraint when addressing these issues. While reserve margins had declined in recent years, consumers noted that they remained above safe levels. Representatives for large industrial customers likewise warned that the so-called

For consumers, generators were offering "a heads I win, tails you lose" vision of deregulation.

"remedies" pushed by generation companies could lead to as much as a 93-percent increase in some wholesale energy prices. That would be bad news not just for big business customers, but for anyone who pays an electric bill. "These cost impacts are extreme and unjustified, and ... will result in great harm to the market," stated the Texas Industrial Energy Consumers in a PUC proceeding.¹⁹

In October the PUC approved price floors for certain sorts of reserve energy that ERCOT deploys during emergency situations. But representatives for generation companies continued pressing for higher price floors and other artificial supports to further enhance their profits.²⁰

DEREGULATION AND RELIABILITY

The resource adequacy issue received even more scrutiny in 2011 after a series of reliability emergencies. The first occurred in early February, when dozens of generating plants seized-up during a cold snap. At the same time usage peaked. ERCOT responded by ordering rolling blackouts and as a result, millions of Texans lost power. (For more on ERCOT, see Appendix E). All told, approximately one-third of the state's generation fleet was unavailable during the most difficult point of the crisis, according to federal officials.²¹

ERCOT also faced repeated grid emergencies in July and August, when the state broke demand records during a historic heat wave. Although ERCOT did not resort to roll-

ing blackouts, it took other emergency action — such as disconnecting some big industrial consumers, and calling for the public to shut off appliances during peak hours. New statewide electricity usage records were set on Aug. 1st, 2nd and 3rd.

Although Luminant in North Texas claimed that it lost money during the February blackouts, the crises represented a potential profit bonanza for other generators.²² That's because in both the summer and winter grid emergencies, prices in the wholesale electricity market shot up to a \$3,000 per megawatt/hour cap²³ — or about 50-60 times higher than typical prices. Prices remained at those inflated levels for hours. That some companies were rewarded during the emergencies raised additional questions about the state's electricity market, especially given that ERCOT had been obligated to order statewide rolling blackouts twice in just five years under the system, but only once ordered similar rolling outages in its 30-plus years before deregulation.²⁴

Robert McCullough, an Oregon-based economist, was among those raising questions. He noted, for instance, that the cold snap that led to the rolling outages in 2011 was not an unprecedented event. There were similar cold weather events in 1983, 1989, 2003, 2006, 2008 and 2010, but in only one of those instances — during the cold weather event of 1989 — had ERCOT resorted to rolling blackouts.²⁵ McCullough also questioned whether a lack of efficiency under the new nodal system played a role, noting that prices spiked to the nearly unprecedented levels shortly after the new nodal system went into effect, and only within a day of the lifting of price caps.²⁶

However, a separate investigation by the state's Independent Market Monitor failed to find problems with the nodal system or any evidence of market manipulation.²⁷ A government organization known as the Texas Reliability Entity blamed the outages for the most part on inclement weather, although it said plant operators could have done a better job.²⁸ The North American Electric Reliability Corporation noted that "given the high demand and the huge loss of generation" it was not so surprising that prices hit the \$3,000 per megawatt/hour cap.²⁹

PRICES

Electricity prices declined in 2011, bringing some relief to Texas consumers. This continued a trend that had begun in 2009 and related to changes in the commodity cost of natural gas, which fuels many generating plants in Texas. All told, the average residential price of electricity was down a little less than 3 percent, compared to prices during the same period in 2010. Also, it appeared that annual average residential electricity prices in 2011 would dip below the national average. This is in contrast to the years of higher-than-average prices following deregulation.³⁰

ERCOT Usage Records

Source: Electric Reliability Council of Texas

Aug 3, 2011
68,379 megawatts

Aug. 2, 2011
67,929 megawatts

Aug. 1, 2011
66,867 megawatts

Aug. 23, 2010
65,776 megawatts

One megawatt of power is enough electricity to power about 200 homes during hot weather.

This relief in prices only served to mask the market's relatively poor performance over the long term. For instance, data collected by the federal government revealed that the average price of electricity for residential consumers in Texas had gone up 45 percent between 2002 and 2011, but only 37 percent nationwide. Average electricity prices also remained significantly higher in Texas in 2011 than in adjoining states, even among those states with a similar reliance on natural gas.³¹

Wholesale spot electricity prices spiked to a regulatory cap of \$3,000 per megawatt/hour during several intervals in September and October. These high spot market prices trickled down into the retail electricity market, which, when combined with high usage, contributed to punishingly high electric bills for many Texans. "My first reaction was there must be an error," said one Dallas resident after receiving a \$1,200 bill after his rates tripled.³² A 2011 survey by Whitefence.com, a commercial website, also found that electric bills in Houston were the second highest among 21 major cities nationwide. Dallas was ranked 6th in the survey.³³

STRANDED COSTS

Consumers were also hit in 2011 with additional deregulation-related costs as a consequence of important rulings by the Texas Supreme Court. Two major utilities — CenterPoint Energy serving the Greater Houston area, and American Electric Power Texas Central Company in south Texas — had asked the court to overturn earlier PUC rulings relating to the companies' requests for "stranded costs" reimbursements. The PUC had consented to more than \$3.5 billion of these deregulation-related charges, but the companies wanted more. In 2011, the Texas Supreme Court awarded the utilities much of their request — and as a result, millions of Texans around Houston and elsewhere will get hit with additional charges on their home bills for at least another decade.³⁶

In 1999, the PUC forecast that Texans would not be liable for more than about \$5 billion in these deregulation costs.³⁷ It is now evident that Texans will be on the hook for more than \$6.5 billion. It's also clear that if not for the hard work of

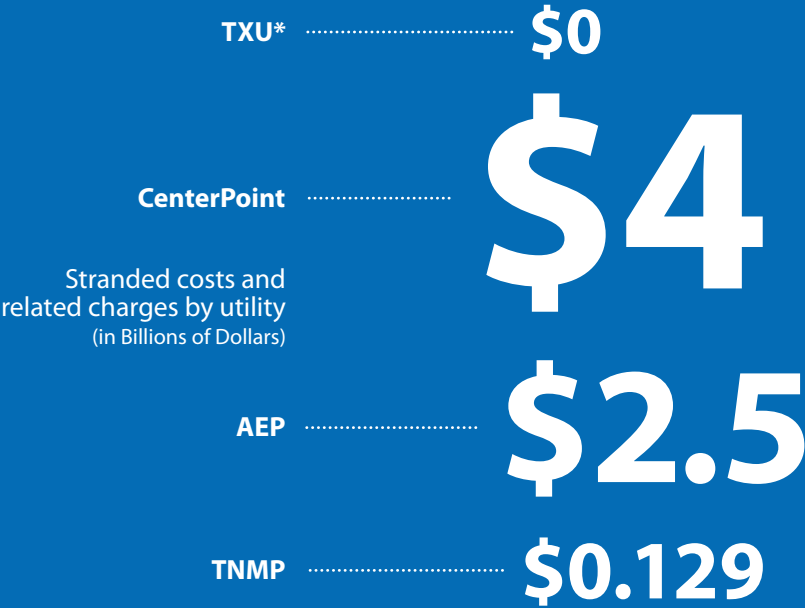
city coalitions and other consumer representatives, the final tally could have been nearly \$10 billion. That's because the state's largest utility in 2001 agreed to forfeit all stranded costs.³⁸ The value of this agreement alone might now be estimated as exceeding \$4 billion. (For more on stranded costs, see Page 66).

As of June 2012, average overall electricity prices in Texas were higher than average prices in adjoining states.

The number of complaints lodged against electric companies at the PUC fell somewhat in 2011, but remained more than three times higher than those filed on an annual basis before deregulation.³⁴ (See Appendix B). An industry survey also found that many Texans in 2011 remained confused about basic aspects of the deregulated market. "This demonstrates that after ten years of retail competition and deregulation, many people are unclear about the details of how the electric market in Texas works," the survey's authors concluded.³⁵

Stranded Costs Awards in Texas

**North Texas customers of the utility formerly known as TXU owe no stranded costs thanks to a settlement negotiated with the company by a coalition of cities and other consumer representatives.*



CenterPoint Energy had claimed under the terms of Senate Bill 7 that it was owed more than \$4.25 billion in stranded costs and other related charges. (Stranded costs are the theoretical losses the company would accrue because its investments made under the previous regulated system would be less valuable under the new deregulated system.) Over the objections of a city coalition and other consumer representatives, the PUC in 2004 awarded CenterPoint \$2.3 billion of its request. The company appealed to the courts. On March 18, 2011, after a series of lower court decisions, the Texas Supreme Court awarded the company approximately \$1.7 billion more.

Combined, the PUC and Texas Supreme Court rulings were a tough blow for consumers. The generating assets that CenterPoint claimed had become less economic under deregulation were subsequently shown to be quite valuable. Through negotiations, city coalition attorneys and others representing consumers had managed to shave off hundreds of millions of dollars from the final stranded costs payment to the company — thereby ameliorating some of the price shock. But Houston-area residents will still be on the hook for around \$4 billion, and as a conse-

quence can expect to pay about \$7.30 more per month for years to come.

The second major stranded cost case to conclude in 2011 involved Texas Central Company, a division of American Electric Power. Its customers are largely located around Corpus Christi and throughout South Texas. In 2006, the PUC authorized AEP to recover \$1.5 billion in these deregulation-related costs from its customers. In July, 2011 the Texas Supreme Court awarded the company an additional \$420 million, plus interest. Since the interest has been accruing for 10 years, the full amount to be collected from ratepayers could range from between \$800 million and \$1.2 billion. That puts AEP's customers on the hook for about \$2.5 billion, for an average bill impact of approximately \$7.45 per month.

The Texas Supreme Court in 2011 denied a petition to overrule the PUC in a third stranded cost case, this one involving Texas-New Mexico Power. The PUC earlier had awarded the company \$129 million, but also denied it another \$106 million at the urging of city coalitions. By denying the company's petition, that PUC decision remains final.

Year: 2012 Pricing and Reliability Challenges Continue

Residential electricity prices in areas of Texas with deregulated electricity service dipped below the national average for the first time in a decade. For Texas under deregulation, 2012 marked the fourth consecutive year of declining electricity prices.¹

Although welcome news, a closer look behind the numbers revealed that serious challenges remained. For example, an analysis of federal data revealed that Texans in deregulated areas continued paying significantly more, on average, than Texans outside deregulation. In 2012 Texans in deregulated areas would have saved more than \$1.5 billion collectively (and \$280 individually) had they paid average residential prices that matched those paid by Texans in areas exempt from deregulation.² Relative to the national average, residential electricity customers in Texas received a better deal prior to the adoption of Senate Bill 7.³

“Nobody wants rolling blackouts (but) neither do we want higher electric bills”

— State Senator Wendy Davis

On a separate front, new power plant construction was just barely keeping up with demand, and some policy experts were diagnosing serious “structural” problems with the Texas market.⁴ In 2012, the North American Reliability Council declared that the Lone Star State had the nation’s least reliable grid.⁵ This was in contrast to big generation reserves prior to the adoption of the Texas electric deregulation law.⁶ Major generation companies like NRG and Luminant continued to clamor for regulatory intervention, complaining that the market was not producing sufficiently high prices to support new investment.⁷ This was in contrast to the industry’s earlier warnings against market intervention, when prices were sky high.⁸ ERCOT officials released projections showing the state’s reserve margins for generation capacity falling below safe levels within only a few years.⁹

The PUC took action in June by increasing the offer price cap on wholesale electricity by 50 percent.¹⁰ This decision allowed generators to offer their power into the spot market

ERCOT’s Energy Consultant: “Price is not Relevant”

On Oct. 24, during a meeting of the State Affairs Committee of the Texas House of Representatives, Brattle Group principal Sam Newell told lawmakers that price “is not relevant to the choice that you have to make” relating to generation reserves, reasoning that costs would rise with whatever option was selected. A representative for large scale electricity consumers disagreed, saying that price was extremely relevant to the debate — and that not all options proposed by Brattle would cost the same.³²

at prices of up to \$4,500 per megawatt hour, up from the previous cap of \$3,000. The Commission reasoned that this change would deliver more revenues to generators and therefore spur new investment. But the Commission engaged in very little public deliberation of the potential bill impact on Texas consumers, despite very public concerns raised by the editorial boards of major newspapers and several state representatives.¹¹ “Nobody wants rolling blackouts (but) neither do we want higher electric bills,” wrote Wendy Davis, a state Senator from Fort Worth, in a May 4th letter to the agency.¹² Moreover, some retail electric providers claimed the right to break fixed-rate deals with customers as a result of the change,¹³ and at least one company apparently did so.¹⁴

Even before the increase, Texas had the highest wholesale offer cap in the nation by far. Spot market generation prices shot up to the previous \$3,000 cap several times after it went into effect in 2011, and generators in 2012 also quickly hit the \$4,500 cap, albeit for a brief period.¹⁵ To put those prices in perspective, \$4,500 per megawatt hour represents a price more than 100 times higher than those typically paid in the wholesale spot market. In November, the PUC

agreed to phase in even more increases — to \$5,000 in 2013, \$7,000 in 2014 and finally to \$9,000 in 2015.¹⁶

A coalition of industrial customers found that a \$9,000 cap could cost the state an additional \$14 billion annually. For its analysis, the industrial coalition assumed the extreme weather conditions of 2011. A separate analysis, using the same assumptions, calculated bill increases of \$48 to \$50 per month.¹⁷ “These are staggering numbers and the impact of the Commission’s decision ... should not be trivialized or viewed as a purely academic exercise,” wrote an attorney for the Texas Industrial Energy Consumers in a June 15th regulatory filing.¹⁸

In July a consulting firm known as The Brattle Group released a 135-page report analyzing the state’s generation challenges. This Brattle report laid the framework for much of the ensuing policy debate in 2012, although — as with deliberations generally on the issue — it failed to include any comprehensive analysis of consumer costs.¹⁹ The Brattle report enumerated various policy options and ranked them in terms of cost and complexity (see page 70). It also cautioned against implementing changes too quickly and without adequate analysis.

Among the more controversial proposed options in the Brattle report was a “capacity market,” which is a market structure common in deregulated states in the northeast. Under a capacity market, generators are paid both when they produce energy, and for providing capacity — that is, they are paid for plants that simply exist and stand ready to produce energy. It would be akin to paying a supermarket for the groceries you buy, plus an extra fee for the supermarket shelf space.

Texas, by contrast, operates a variation of an “energy-only” market in which generators typically get paid only for the power they sell, and not for owning capacity. Energy-Only markets require much less regulatory intervention than capacity markets.

Capacity markets have been controversial and unpopular in the northeast because they layer additional costs on top of existing energy costs. Another complaint is that capacity markets are extremely complex, opaque, and

prone to litigation about their outcomes. They also can lead to windfall revenues for power companies with large generation fleets — whether those power companies invest in new capacity or not.

Capacity markets have been controversial and unpopular in the northeast because they layer additional costs on top of existing energy costs.

The Brattle report in some ways seemed to lean toward the capacity market option, and during an Oct. 24th hearing Brattle principal Samuel Newell appeared to issue a full-throated endorsement of that option. “If you’re very intolerant of (black-outs) ... then a capacity market is unambiguously the best way,” said Newell.²⁰ But consumer groups expressed alarm, calling a capacity market one of the costliest options. The Texas Industrial Energy Consumers, in a regulatory filing, also questioned the validity of some of the Brattle analysis, calling it “a result-oriented exercise that begins with ... false assumptions.”²¹

Another flash point in the debate was the reserve margin itself. Recall that the reserve margin is a measurement, expressed as a percentage, of the potential output of the state’s generators beyond that which is needed to meet peak demand by consumers. As such, it measures surplus generation and is a useful gauge of system reliability. The higher the generation reserves, the lower the chance of blackouts. ERCOT had targeted a 13.75 percent reserve margin, under which it was thought the state would not endure more than one system-wide outage every 10 years.

But during a PUC hearing in July, Newell suggested that some of the publicly expressed concerns over blackouts had been exaggerated, and that even with a smaller reserve margin the blackout risk would not necessarily increase dramatically. For instance, with a 10 percent reserve margin, outages would increase by another 40 minutes per year per customer — even during a year with extreme heat and

cold. “We are not talking about the doomsday scenario that we’ve seen described in the press that Texas is on the verge of having, you know, constant rolling blackouts — that’s just an extreme exaggeration,” said the Brattle Group principal.²² The consultant also noted that Texans were already accustomed to several blackouts per year, but on the more limited distribution level.²³

“We are not talking about the doomsday scenario that we’ve seen described in the press that Texas is on the verge of having, you know, constant rolling blackouts — that’s just an extreme exaggeration,”

— **Brattle Group principal.**

ERCOT had released a report in May predicting that the state’s reserve margins would dip below 10 percent by 2014.²⁴ However, in October the organization revised its projections upward, after accounting for planned new plant construction.²⁵ Separately, the Texas Industrial Energy Consumers concluded that when available mothballed generation plants were added to those calculations, the state’s reserve margins would remain above safe levels through 2017.²⁶ PUC Commissioner Ken Anderson said forecasts showed healthy reserves through at least 2018.²⁷

VOLUNTARY MITIGATION PLANS

Think Enron’s bad behavior, market manipulation, gaming — what precisely constitutes market abuse can be hard to describe, but most would agree that it’s bad when it happens. Under a number of proposals adopted by the PUC in 2012, generation companies obtained additional legal protections against such allegations.

Known as “Voluntary Mitigation Plans,” these proposals are designed by the generation companies themselves and are meant to describe fair business practices. They typically include descriptions of bidding behaviors and other

rules that, if followed, should signal to regulators that the generation company is playing by the rules. As long as the companies do not deviate from the actions they describe in the plans, the companies remain protected against prosecution for anti-competitive behavior. By October the PUC had approved voluntary mitigation plans for two companies, while another plan remained pending.

Voluntary mitigation plans present serious problems for consumers. First, they are extremely complex and no single entity will have the same understanding of these plans as the companies that devise them. This has raised concerns because each company that submits a voluntary mitigation plan has a direct interest in maximizing its own position in the market. So while these plans supposedly describe fair practices, theoretically they also could open the door to gaming opportunities.

Also, only the companies, the independent monitor of the state’s electric market and PUC staff have been allowed to negotiate the details of these plans. No substantive input so far has been permitted from experts with entities that attempt to safeguard the market and protect ratepayers.

Another worry is that these plans may allow companies to further leverage the extremely high prices permitted in the state’s wholesale energy market. Texas maintains the nation’s highest wholesale price cap for energy, and that offer cap will continue to increase through at least 2015. Through these plans, the companies may gain an ability to more easily price power at these extreme levels. This, in turn, could lead to higher bills for businesses and homes.

The plans were authorized under House Bill 2133, adopted in 2011 by the Texas Legislature. Ratepayer groups generally supported HB 2133 because it closed a loophole in Texas law that allowed generation companies to profit from anti-competitive behavior.²⁸ But ratepayer groups had serious concerns regarding the voluntary mitigation plan provisions.

As *Houston Chronicle* columnist Loren Steffy pointed out, the “plans, combined with the PUC’s earlier vote to raise the price limits on the wholesale market by 50 percent, will give big generators greater potential to control the market.”²⁹ By October, the PUC had adopted voluntary mitigation plans by Houston’s NRG and GDF-Suez.³⁰

Brattle Report: Comparisons of Policy Options

Source: ERCOT Investment Incentives and Resource Adequacy, Brattle Group, June 2012, Table 1 pg. 5

Option	How Reliability Level is Determined	Who Makes Investment Decisions	Risk of Low Reliability	Investor Risks	Economic Efficiency	Market Design Changes
1. Energy-Only with Market-Based Reserve Margin	Market	Market	High in short-run; Lower in long-run	High	May be highest in long-run	Easy
2. Energy-Only with Adders to Support a Target Reserve Margin	Regulated	Market	Medium	High	Lower	Easy
3. Energy-Only with Backstop Procurement	Regulated (when backstop imposed)	Regulated (when backstop imposed)	Low	High	Lower	Easy
4. Resource Adequacy Requirement	Regulated	Market	Potentially Low	Med-High	Medium	Medium
5. Resource Adequacy Requirement with Capacity Market	Regulated	Market	Low	Med-High	Medium	Major

A report by a consulting firm known as The Brattle Group enumerated several policy options to address the state's generation challenges. The chart, above, summarizes some of those options. Brattle also cautioned in the 2012 report against implementing changes without adequate analysis.

On June 1, 2012 ERCOT made public a report prepared by The Brattle Group — a national energy consultancy — on the state's wholesale energy market. The consulting group had been charged with analyzing the market's ability to attract generation investment. ERCOT and the Public Utility Commission had begun considering such questions after the particularly difficult summer of 2011, when the state experienced power shortfalls and came close to rolling outages. The Brattle Report included a number of important findings. Among them:

- ERCOT and the PUC should revisit the 1-in-10 year blackout standard, under which the state's reserve margin targets are set in such a way as to avoid more than one major blackout every 10 years. ERCOT and the PUC have used this standard to justify a 13.75 percent target for reserve capacity. But ERCOT enforces a more stringent interpretation of the 1-in-10 standard than is employed elsewhere. That is, ERCOT interprets the standard to mean "1 outage event in 10 years," while other system operators interpret it to mean "24 outage hours in 10 years." These two interpretations may sound semantically similar, but in reality differ greatly: Brattle cited a case study in which the less stringent standard reduced reserve margin requirements by nearly 50 percent.³¹ "The 1-in-10 standard is also poorly-defined with respect to the events it describes," Brattle noted, explaining that the standard makes no distinctions between small-scale blackout events and widespread events.
- In ERCOT, the resource adequacy target implies average outages of less than 1 minute per year, per customer. But customers are accustomed to much greater outage times caused by disturbances in the more local electricity distribution systems. "During storm events, annual outage durations can reach several hundred to several thousand minutes per customer," according to Brattle.
- As of the first half of 2012, the ERCOT market was not producing wholesale energy prices that were sufficiently high to maintain a 13.75 percent reserve margin. Increasing the offer cap on wholesale energy prices would stimulate investment, but at a level still insufficient to obtain that targeted reserve margin.
- Demand response — that is, programs under which customers can curtail their energy usage in exchange for a payment — could help meet the state's generation supply challenges. However, it will take too long to create sufficiently robust demand response programs to meet the state's near-term energy needs.
- A modified energy-only market could risk low reliability in the short term, but improved reliability in the long-term. Such a strategy also may have the highest economic efficiency over time — that is, Texans would get the best bang for their buck with regards to financing improved reliability.

Year: 2013 Texans Make Payments for Non-Existent Utility Taxes

An early 2013 report from TCAP found that Oncor, the North Texas electric utility, had charged its customers hundreds of millions of dollars for a non-existent federal tax liability.¹ Citing federal and state government filings, the report documented more than \$500 million in payments by Oncor customers since 2008 — supposedly for the utility's federal income taxes. But the utility does not have a federal income tax obligation and its beleaguered majority owner, Energy Future Holdings, had not owed income taxes since at least 2008, the report showed.

Under state law then in effect, Texas regulators had the ability to recongnize the tax savings enjoyed by utilities

when they file a tax return jointly with their parent and affiliates. Although the Public Utility Commission had declined to exercise that authority with regards to Oncor, the PUC commissioners utilized it when considering the treatment of taxes in rates charged by other utilities.

TCAP issued a recommendation during the 2013 Legislative Session that money collected from electric ratepayers for federal taxes should be used to pay federal taxes — or the utilities should not collect the money at all.

Unfortunately the Texas Legislature in 2013 took the opposite tack. Bowing to industry pressure, lawmakers

Legislative Session

The 83rd Regular Session of the Texas Legislature concluded on May 27, 2013. Over 100 bills pertaining to the gas and electricity market were filed by lawmakers. Here are a few highlights:

- Electric and gas utilities pressed unsuccessfully for the passage of House Bills 1148 and 1149, which would have made it more difficult for cities to protect their citizens in utility rate cases. City and consumer groups testified in opposition to these bills, and with the help of the Texas Municipal League derailed them in committee.
- The Legislature adopted House Bill 1600, which reauthorizes operations at the Public Utility Commission. HB 1600 includes a handful of new reforms, including rules giving the PUC additional oversight authority to protect the electric power grid. During the debate over HB 1600, lawmakers also specifically directed the PUC to conduct a cost-benefit analysis before authorizing an expensive "capacity market" that could increase annually electric costs by billions of dollars. However, that provision was removed before final passage.
- Lawmakers adopted House Bill 7, which includes language to discontinue the System Benefit Fund that provides rate discounts for low-income customers. The System Benefit Fund is financed through a charge on electric bills, although lawmakers over the years had held back a sizable amount for state budget-balancing purposes. Under HB 7 the accrued funds will be paid out to low income customers through 2016, and then the System Benefit Fund will be discontinued.
- As noted above, the Texas Legislature adopted Senate Bill 1364, over the objection of municipal coalitions and consumer groups. SB 1364 limits the PUC's discretion over how much electric utilities charge to their customers for federal corporate income taxes.

adopted Senate Bill 1364 that deprived the PUC of an important ability to adjust rates for utilities with parent companies that file consolidated returns. Such consolidation results in tax savings that would be impossible otherwise. Previously the PUC could adjust rates to reflect the local utility's fair share of that savings. Under SB 1364, the PUC lost that ability and the utility or its parent company can now simply pocket the extra money. Adoption of the bill was a top priority of the Houston-based transmission and distribution utility, CenterPoint.

Approximately 100 additional bills relating to electricity and gas service were filed during the 83rd Legislative Session, including many bills harmful to consumer interests. The electric and gas utilities deployed their usual army of lobbyists, with between \$5 million and \$10 million spent on lobby contracts by five electric companies alone.² But despite the well-funded

opposition, energy consumers won significant victories — including some reforms to the Public Utility Commission. Several bills harmful to the interests of municipal, business and residential energy consumers also failed during the waning days of the session.

LEGISLATURE DISCONTINUES SYSTEM BENEFIT FUND

In 1999, with the adoption of the electric deregulation law, the state legislature created the System Benefit Fund. Part of a negotiated deal with consumer groups, the main purpose of the fund was to provide rate discounts for low-income Texans. It was financed entirely through a fee on electricity bills.

But despite the agreement with consumers groups, lawmakers in subsequent years began holding back the money and reducing the bill discounts. Instead, the unappropriated funds were employed in an accounting trick to

balance state budgets.³ This occurred year after year. By 2013, approximately \$800 million had accumulated in the System Benefit Fund, having served as offsets to spending elsewhere in the state budget.

But with the passage of House Bill 7, in 2013, that practice came to an end. The bill called for the disbursement of all System Benefit Fund money, and then the eventual discontinuance of the SBF after 2016. As a result, large bill discounts — \$170 for a typical low-income user — began

appearing in customer bills during the summer of 2013, with smaller discounts to be applied during the summers of 2014, 2015 and 2016.⁴

About 600,000 low-income Texans were eligible for the discounts. The discounts were so large in 2013 that for several months some bills were reduced to zero.⁵ “The good news is that this money collected to help low-income

people for utility bills is going to be used — there's a tremendous need,” said AARP's Tim Morstad. “The not-so-good news is that in several years, the program will be terminated.”⁶

Another potential bit of collateral damage with the loss of the System Benefit Fund could be the powertochoose.com website. The state-run website lists various retail electric providers, and was created by the PUC to help Texans shop for electricity. It is funded with proceeds from the System Benefit Fund. Whether the state would identify a separate source of revenue to fund the website remained an open question in 2013.⁷

NEW COMMISSIONER APPOINTED AND SUBSIDY MANDATES DEBATED

In August Gov. Rick Perry named his former chief of staff, Brandy Marty, to a position on the three-member Texas Public Utility Commission. Marty assumed a seat vacated

“The good news is that this money collected to help low-income people for utility bills is going to be used — there's a tremendous need,”

— AARP's Tim Morstad.

Capacity Subsidies

Under the subsidy proposals, generators would collect extra payments — potentially billions of dollars of extra payments — beyond what they otherwise would receive from selling electricity. There would be a government requirement that retail electric providers and other entities that serve customers pay these subsidies. Although promoted as a way to ensure generation investment and guard against future blackouts, critics questioned the effectiveness and expense of the proposed subsidies. Those critics include business, consumer, environmental and free-market groups.

by Rolando Pablos, who resigned in March.

Marty had worked in various capacities with Gov. Perry, including as a policy director during his 2010 campaign.⁸ She came to a divided commission, with PUC Chair Donna Nelson and Commissioner Kenneth Anderson remaining split on the controversy regarding proposed capacity subsidies to Texas power generators.⁹ For many months Ms. Marty said little to reveal her thoughts regarding the issue, but in October Marty joined Chair Nelson in supporting a mandated reserve margin.¹⁰ This was seen by many observers as a step toward the implementation of a capacity market.

In a heated exchange during the Oct. 25 meeting Commissioner Anderson blasted the decision.¹¹ “I am... opposed to mandatory reserve margins as uneconomic with the potential to destroy the economic engine that is Texas,” he said.¹² The distinction between a mandated reserve margin and a targeted reserve margin is an important one. Under the deregulated electricity system, Texas has operated with a reserve margin target, not a reserve margin mandate. The reserve margin target represents ERCOT’s goal for generation reserves. In Texas, no government requirement exists that the reserve margin target be met.

Free market groups and others complained that by favoring a mandated reserve margin, the PUC had retreated from the free market principles under which the state established its electric deregulation law in the first place.¹³ The unofficial decision to mandate a reserve margin also drew the

ire of Democrat Wendy Davis, a state senator running for governor, and Republican Troy Fraser, who chairs a key energy-related committee in the Texas Senate. Davis said it was wrong for the PUC to move forward without first conducting an analysis on consumer costs.¹⁴ Fraser, during a meeting of his Senate Natural Resources Committee, claimed the PUC had overstepped its authority. “You are way ahead of yourself,” he told the PUC chair.¹⁵

Whether targeted or mandated, reserve margins are expressed as percentages. These percentages express the ratio between the total amount of generating capacity available within a given service territory and the hypothetical greatest electricity demand within that area. In 2013, generators and some others pressed to increase the reserve margin target from 13.75 percent to 16.1 percent — a change that would potentially cost Texans more than \$3 billion over 10 years.¹⁶ ERCOT put the proposal on hold after it drew the ire of Sen. Fraser, who wrote in a letter that “an increase ... of this scale could not help but serve the interests of those advocating for a capacity market, a system which would subsidize existing generation.”¹⁷

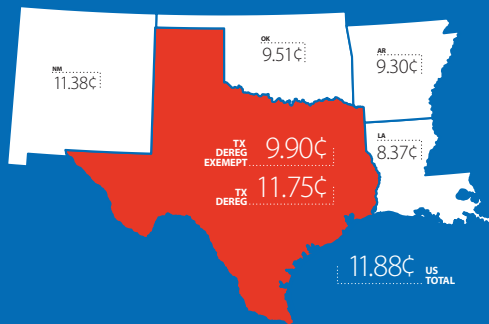
PUC Commissioner Anderson continued speaking out against the capacity market proposals throughout 2013.¹⁸ That summer, for instance, he took aim at a study released by NRG that predicted multiple blackouts each year unless the PUC created a capacity payment system. The NRG study put the resulting cost to the Texas economy at more than \$14 billion. Commissioner Anderson said NRG had baked bad math into its analysis, citing the work of his policy advisor who calculated the energy giant had overstated the costs “by at least a factor of 10 (likely by a factor of at least 40).”¹⁹

The generators themselves were not particularly consistent on the issue. In a June 2013 guest editorial, John Ragan, an executive for energy giant NRG, warned that Texas was falling behind with regards to generation construction and could face serious shortfalls unless they could collect subsidy payments. “We support the capacity market option,” wrote NRG regional vice president.²⁰ But then in August, in an earnings report to investors, NRG CEO David Crane acknowledged that new generation construction was not supported in competitive electric markets anywhere in the U.S. — including in those jurisdictions that already allow capacity payments.²¹ Ragan also appeared to have been contradicted in Arizona by an electric industry trade group, which claimed in written comments that the “outlook for dire consequences” with respect to generation reserves

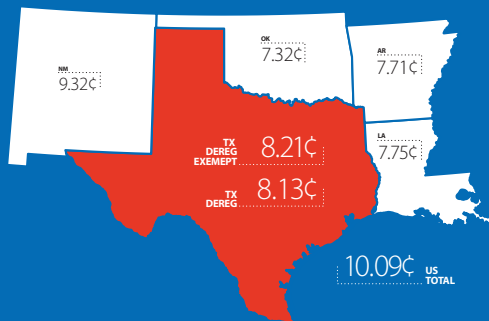
Electricity Prices in 2012: Texas and Adjoining States

Source: United States Energy Information Administration/
<http://www.eia.doe.gov/cneaf/electricity/page/eia861.html>

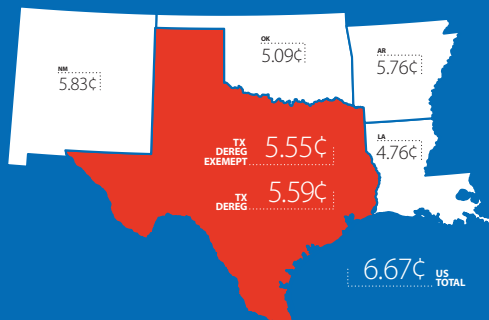
Residential Sector



Commercial Sector



Industrial Sector



in Texas “appears to be wholly overstated.”²² This trade group, the Retail Energy Supply Association, counts NRG among its members.²³

PROBLEMS CONTINUE FOR ENERGY FUTURE HOLDINGS

Luminant, the state’s largest electric generation company, agreed in November to pay \$750,000 to settle charges relating to the statewide power outages. Staff at the Public Utility Commission said Luminant failed to comply with ERCOT’s instructions during the outages, which occurred during a 2011 cold snap. Luminant’s failure meant that the grid operator “did not receive capacity resources it needed,” the PUC said.²⁴ As is usual with such cases, Luminant agreed to pay a penalty but declined to admit culpability.

The Luminant penalty came as more bad news for the failing Energy Future Holdings, the generation company’s holding company. Although the Dallas-based company showed a modest profit during the third quarter of 2013,²⁵ it recorded \$3.36 billion in losses in 2012 and nearly \$2 billion in 2011. Many analysts predicted restructuring in 2014, when it faces a balloon payment on its massive debt acquired during the 2007 buyout of TXU.²⁶

PRICES

TCAP released a report in 2014 showing that Texans in deregulated areas have continued paying significantly more, on average, than Texans outside deregulation. Texans in deregulated areas would have saved more than \$22 billion collectively since 2002 had average residential electric prices under deregulation matched average prices outside deregulation. Over the course of deregulation, the computed savings for a typical customer under deregulation would have exceeded \$4,500, according to the report.²⁷

Appendix A: Senate Bill 7 — Key Components

When Gov. George Bush signed Senate Bill 7 into law in 1999, he instituted what some have called America's most audacious experiment in the deregulation of electric power. Gov. Bush was clear about his intentions. "Competition in the electric industry will benefit Texans by reducing rates and offering consumers more choices," he said.

No longer would the production and sale of electricity be considered monopoly enterprises. Instead, SB 7 called for "the establishment of a fully competitive electric power industry" where market forces dictate prices and service. The companies that own, operate and manage the transmission and distribution system remained regulated — but most regulation of companies that produce and sell electricity would end.

SB 7 states "the Legislature finds that the production and sale of electricity is not a monopoly warranting regulation of rates, operations and services and that the public interest in competitive markets requires that... electric services and their prices should be determined by customer choices and the normal forces of competition." The Legislature ordered far-reaching changes to the market.

STRUCTURAL CHANGES

The electric power industry has three main functions — generating power, transporting power over power lines to the customer, and interacting with the customer (billing, opening new accounts, resolving problems, etc.). Prior to deregulation, a single electric company performed these services for all customers within its designated service area. SB 7 made power generation and the provision of retail electric service subject to the normal forces of competition and customer choice. Transmission and distribution services remain regulated. Accordingly, the statute required the former monopoly provider to "unbundle" — that is, to separate — its operations into three distinct entities:

- The power generating company owns and operates the electric power plants and sells its power into the deregulated wholesale power market.

- The regulated transmission and distribution company owns and operates the wires to transport power from the plant to all customers within a certain geographical area.
- The deregulated retail electric provider purchases wholesale power from power-generating companies and re-sells the power to customers. The retail provider is responsible for most interaction with the customer, including billing the customer for transmission and distribution services and for the power purchases. However, a retail provider may not own generation.

At the very minimum, the former monopoly providers were required to create separate companies for each service although the new companies could remain under the same ownership.

SB 7 exempted municipally-owned utilities and cooperative utilities although those entities could opt into deregulation. Areas of Texas not covered by the state's main transmission grid remained outside deregulation unless they met certain requirements. The Panhandle, El Paso, the Golden Triangle and the far northeast corner of the state remain outside those areas where deregulation is mandated.

RECOVERY OF STRANDED COSTS

Before deregulation, utilities were required to build plants to serve the energy needs of their customers. In order to build a plant, a company would invest millions of dollars in construction costs. Once the Public Utility Commission (PUC) determined that the construction costs were prudently incurred, the company was allowed to recover all of its costs and a reasonable level of profit from rate-payers. However, because the costs were substantial, the utilities were not paid back immediately. The payback, with interest, was spread over the projected life of the plant — usually 30 years.

Once the electric market became deregulated, former monopoly providers could not continue to charge regulated

rates to recover power plant construction costs they had already incurred to serve customers. Former monopoly providers feared that they would not be able to sell the power plants at a price that would offset the outstanding debt, and the companies would be forced to choose between two untenable options: charge high prices that could not compete or absorb all of the costs related to the uneconomic plants. The difference between the net book value of the plant and the price that the plant could fetch if sold in the market became the former monopoly providers' "stranded costs."

Lawmakers determined that former monopoly providers should have the right to recover so-called stranded costs from ratepayers. SB 7 includes several provisions regarding the calculation and collection of stranded costs. The statute also imposes some restrictions on the utilities' ability to recover stranded costs and stipulates that no utility would be allowed to over-recover stranded costs.

To minimize the impact to customers, SB 7 established a three-phase process for stranded cost recovery:

- First Phase (Sept. 1999 – Dec. 31, 2001) – Regulated rates that otherwise should have been reduced are frozen. All profits in excess of Commission-set levels are applied to buy down the uneconomic plants' book value.
- Second Phase (Jan. 1, 2002 – Dec. 31, 2004) – Preliminary estimates of potential stranded costs are developed for each utility to determine whether efforts taken in the first phase were successful. If the preliminary estimates indicate stranded costs are still possible, an initial fee is surcharged to the transmission and distribution utility. The fee to the transmission and distribution utility is passed on to customers by the retail electric provider and would be used to continue buying down the uneconomic plants' book value.

- Third Phase (Beginning January 2004) – Former monopoly providers are required to true-up the actual, final value of stranded costs, taking into account the efforts in the previous two phases. Unlike the stranded cost projections in the earlier phases that relied upon a mathematical model to calculate potential-stranded costs, SB 7 provided utilities four different options to derive a final market value for potentially stranded generation assets. If the net book value exceeds the final market value, then the utility is entitled to recover stranded costs. Stranded costs are to be recovered through a fee that will be surcharged to the regulated rates of all customers within the former monopoly provider's service area.

THE PRICE TO BEAT

SB 7 required utilities to freeze their rates beginning on Sept. 1, 1999. When the deregulated market opened on Jan. 1, 2002, retail electric providers affiliated with the utilities were required to charge a price that was six percent less than the regulated rate that existed on Dec. 31, 2001. Until 2005, this new rate (known as the "Price To Beat") was the only rate that the provider affiliated with the former monopoly company was allowed to charge residential and small commercial customers in the old service area. The Price To Beat created a target for competitors to undercut with lower prices. A provider affiliated with a former monopoly electric company was required to offer the Price To Beat rate until Jan. 1, 2007. However, it also could offer plans with alternative prices after Jan. 1, 2005, if it could demonstrate that it had lost more than 40 percent of its customers.

SB 7 offered one exception to the fixed Price To Beat rate providers must charge. Individual Price To Beat providers were able to increase or decrease the rate no more than twice each year to reflect changes in natural gas fuel prices, which fuel some generation plants. The decision to increase or decrease the Price To Beat rate and the timing of the change was left to the Price To Beat provider.

PROHIBITION AGAINST MARKET POWER ABUSES

SB 7 requires the PUC to monitor market power associated with the generation, transmission, distribution and sale of electricity and to protect against any company acquiring generation capacity sufficient to exercise market power in the newly deregulated market. A company with market power is capable of restricting, impairing, or otherwise reducing the level of competition in the market.

Market power abuses specifically prohibited by SB 7 include predatory pricing, withholding of power, precluding entry to the market, and collusion.

Because a company usually has market power by virtue of controlling a large portion of the market, no company is generally allowed to own and control more than 20 percent of generation capacity within a power region. If the PUC finds market power abuses, the statute requires that the offending company submit a plan to mitigate its market power. These market mitigation plans could require the company to sell assets, auction off capacity, or take other measures to decrease the amount of generation capacity they own and control.

ENVIRONMENT

SB 7 included two major provisions relating to the environment, and established new energy efficiency guidelines.

The first provision relates to older generating plants that had been exempted from obtaining clean air permits under the 1971 Texas Clean Air Act. SB 7 set a deadline of May 2003 for utilities to cut overall nitrogen oxide emissions on this fleet of generating plants by 50 percent, and sulfur dioxide emissions by 25 percent (with deeper cuts of nitrogen oxide and sulfur dioxide emissions in urban areas around Houston, Galveston, Dallas and Fort Worth). To accomplish the reductions, SB 7 created a “cap and trade” system. The statute allowed utilities to recover the cost to meet the new standards by including the expenditures in their calculations of stranded costs.

SB 7 also established new statewide mandates and corresponding deadlines for the use of renewable energy. The responsibility for meeting the mandates was assigned to electric retailers based upon their individual share of the overall market. To help carry out this provision, SB 7 created a Renewable Energy Credit trading program, which is man-

aged by the Electric Reliability Council of Texas (ERCOT). Under the program, an electric retailer that acquires more than enough renewable energy to meet its own requirements can sell credits for its excess renewable energy to other companies that have fallen short.

Although the overall renewable energy mandates in this section have increased since SB 7 was first enacted, it was originally intended to foster the construction of 2,000 megawatts of additional renewable energy by 2009 — or enough to power about 1.6 million homes.

New energy efficiency requirements were also introduced in SB 7, including a requirement that regulated transmission utilities administer energy savings incentive programs, provide customers access to energy efficiency alternatives and provide incentives for electric retailers to engage in energy efficiency efforts. Under this provision, electric utilities were expected to reduce their annual growth in energy demand by at least 10 percent by Jan. 1, 2004.

CUSTOMER PROTECTIONS

The Provider Of Last Resort

It was critical to lawmakers that customers always receive power in the deregulated market, even if some providers went out of business or if there was a billing dispute. To ensure reliable service, SB 7 established the “Provider Of Last Resort” service for customers who cannot get power from other providers, or for customers of failed companies that abruptly leave the market. The Provider Of Last Resort is selected by the commission and charges a commission-approved fixed rate for standard service.

The System Benefit Fund

SB 7 established a user fee on electric service. Funds generated by this fee were to be deposited in a special account, known as the System Benefit Fund. The System Benefit Fund was intended to support electric rate discounts for low-income customers, finance energy efficiency programs for low-income households, fund a customer education media campaign relating to retail competition and compensate school districts for the loss of any property tax revenue attributable to the deregulation law.

The Price To Beat

SB 7 created the Price To Beat to serve as both a target for competitors to undercut in order to win new customers and to provide a modest rate cut for customers that were unwilling or unable to switch providers.

Registration and Certification of Market Participants

Although the production and sale of electricity to customers was no longer subject to regulation, SB 7 authorized the PUC to establish minimum requirements for registration and certification of entities operating in the deregulated market.

Aggregation

SB 7 specifically contemplates that multiple customers could join together for the purpose of negotiating better deals in the new market. For example, municipalities and other political subdivisions that procure electricity for their own purposes — consider the expense of lighting city buildings or powering a wastewater station — can join together to purchase electricity. SB 7 refers to entities that band customers together in this fashion as “aggregators.” The law requires aggregators to register with the PUC.

Municipalities and other political subdivisions are authorized to act as aggregators to join together their citizens in order to purchase electricity on their behalf. Under this provision, the citizens must affirmatively request to be included in the aggregation group.

INDEPENDENT SYSTEM OPERATOR

SB 7 requires that an independent entity oversee important operational aspects of the new market. ERCOT was designated as an “Independent System Operator” to fulfill this function.

SB 7 stipulates further that the Independent System Operator remain independent from the individual buyers and sellers of electricity in the market. At the same time, the independent organization must ensure that such buyers and sellers have equitable access to the transmission network. Under SB 7, this organization also is charged with ensuring the reliability and adequacy of power.

As manager of the Texas power grid, ERCOT already was charged with maintaining reliability and adequacy of its operations. ERCOT also was already designated as an Independent System Operator under the provisions of the 1995 law that partially deregulated wholesale electricity.

But under SB 7, ERCOT’s duties — especially those relating to its mission as an Independent System Operator — would expand greatly. Its responsibilities would include the management of new billing and settlement systems, the establishment of broad new rules for wholesale power transactions, and the creation of policies relating to the scheduling of power.

As an Independent System Operator under SB 7, ERCOT must:

- Provide an accurate accounting of electricity production and delivery among generators and wholesale buyers and sellers.
- Ensure that entities that require information relating to a customer’s choice of retail electric provider receive that information in a timely fashion.
- Establish and enforce rules governing wholesale electricity transactions.

As the Independent System Operator, ERCOT also must set up a governing body comprised of four representatives of power generators, four representatives of transmission and distribution operators, four representatives of businesses that sell power, and three members representing consumers.

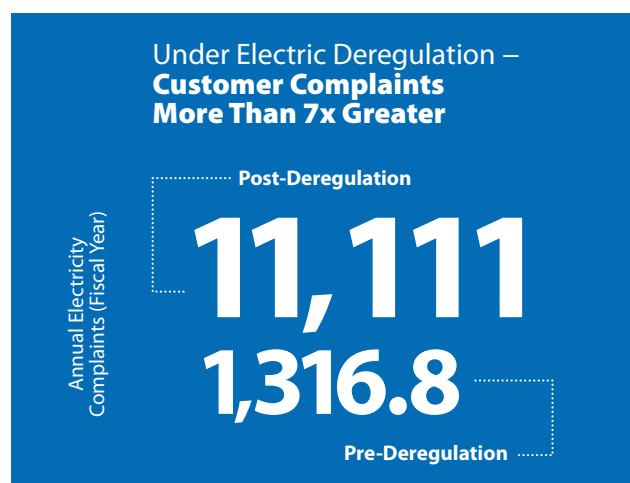
Appendix B: 2013 PUC Complaint Data

**Originally Published as a TCAP Snapshot Report, Sept. 30, 2013.*

Electric consumer complaints have fallen for the fourth consecutive year in Texas and now stand at the lowest level so far recorded under the state's electric deregulation law.

An analysis of data filed with Texas regulators also shows a nearly 17 percent drop in complaints from the previous fiscal year and a more than 55 percent drop from 2009 — a peak year for customer dissatisfaction.

But despite the progress, electricity-related complaints remain much more common today than during pre-deregulation years, the analysis shows.



GOOD NEWS/BAD NEWS STORY

The Texas Coalition for Affordable Power reviews on an annual basis electricity complaint data filed with the state's Public Utility Commission. The data is culled from electric consumer complaints reported to the agency's Office of Customer Protection, which was established in July 1997.

All data are given for fiscal years, and has been obtained under the Texas Open Records law or extrapolated from publicly available PUC reports and newspaper accounts. Data for 1998, 1999 and 2000 are estimated figures.

On balance, the news is good. The 2013 fiscal year marked

the fourth straight year of declining complaints. Compared to the previous fiscal year, complaints decreased in most subcategories monitored by the agency.

The improved complaint rate may relate to increased familiarity with the Texas market by consumers. However, the drop in complaints also roughly parallels drops in electricity prices since 2009, which is related to changes to the natural gas commodity market.

Despite the good news, a longer historical review reveals that challenges remain. The overall number of complaints relating to electricity remains well above numbers recorded prior to the implementation of retail electric deregulation in 2002. The number of complaints filed on an average annual basis prior to deregulation was slightly more than 1,316. The average number of complaints after deregulation is slightly more than 11,111.

Complaints quadrupled with the transition to deregulation and have never returned to pre-deregulation levels, the analysis shows. Population growth and the increased use of the Internet to facilitate the complaint process can explain some of the overall increase in complaints during the deregulation years — but probably not all of it.

For this analysis, TCAP reviewed all electricity-related complaints and electricity service inquiries reported to the PUC for each fiscal year since 1998. This analysis also includes complaints or inquiries relating to the LITE-UP low-income assistance program, which are not included in the PUC's complaint report filed with the Texas Legislature. This analysis does not tabulate complaints filed directly with electric companies, but not to regulators. It is unclear whether the quantity of complaints filed directly to electric companies has increased or decreased over time.

Texans can find complaint data for individual companies at the state's electricity shopping website, powertochoose.com. Under recent website modifications advocated by TCAP, search query results now include complaint ratings along with pricing information for retail electric providers.

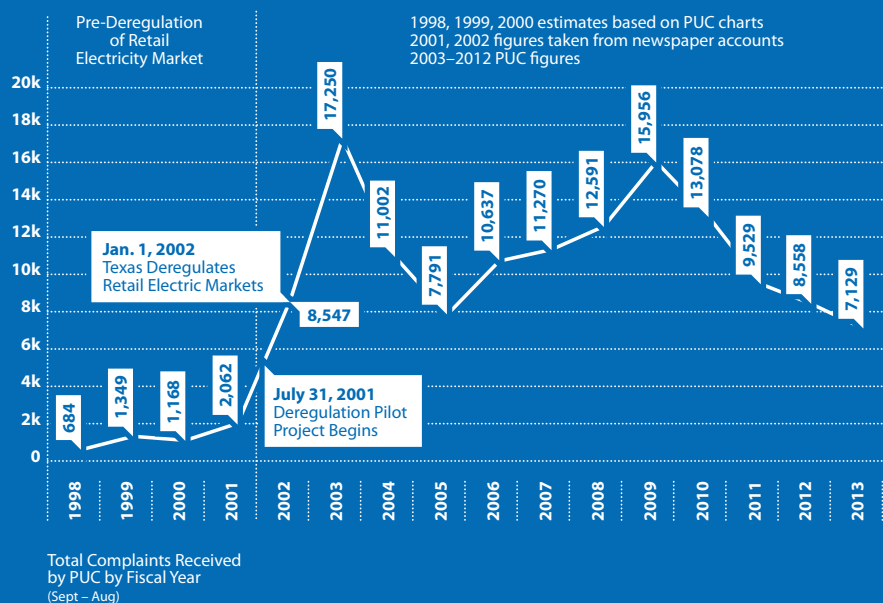
ADDITIONAL FINDINGS:

- The PUC's Office of Customer Protection recorded 7,129 electricity related complaints during the 2013 fiscal year. That's the lowest number of complaints tallied by the agency since deregulation began in 2002.
- The plurality of complaints submitted to the PUC over the last two fiscal years relate to electric bills. In FY 2012, 36 percent of complaints related to billing while the next largest category of complaints — provision of service — amounted to 19 percent. In FY 2013, 40 percent related to billing and 16 percent related to provision of service.
- The practice by some companies of ordering holds on customer accounts generated 133 complaints in FY 2013. Under controversial "switch hold" rules approved by the PUC, some households can be barred from the retail electric market if they get behind in their payments or if they are accused of tampering with their utility meters.
- Texans who filed complaints with the PUC received nearly \$550,000 in refunds during the 2013 fiscal year.
- According to the most recent PUC data (as of March 1, 2013 through August 31, 2013), the three retail electric providers with the highest complaint rates are DPI Energy, Potentia Energy and Acacia Energy. DPI Energy also was among those with the highest complaint rates in a survey last year (in data collected between March 1, 2012 and Aug. 31 2012).
- According to the most recent PUC data (as of March 1, 2013 through August 31, 2013), the three retail electric providers with the lowest complaint rates are Glacial, Nueces Electric Cooperative and TXU Energy. The Nueces Electric Cooperative and TXU Energy were among those with the lowest complaint rates in a survey last year (in data collected between March 1, 2012 and Aug. 31, 2012).

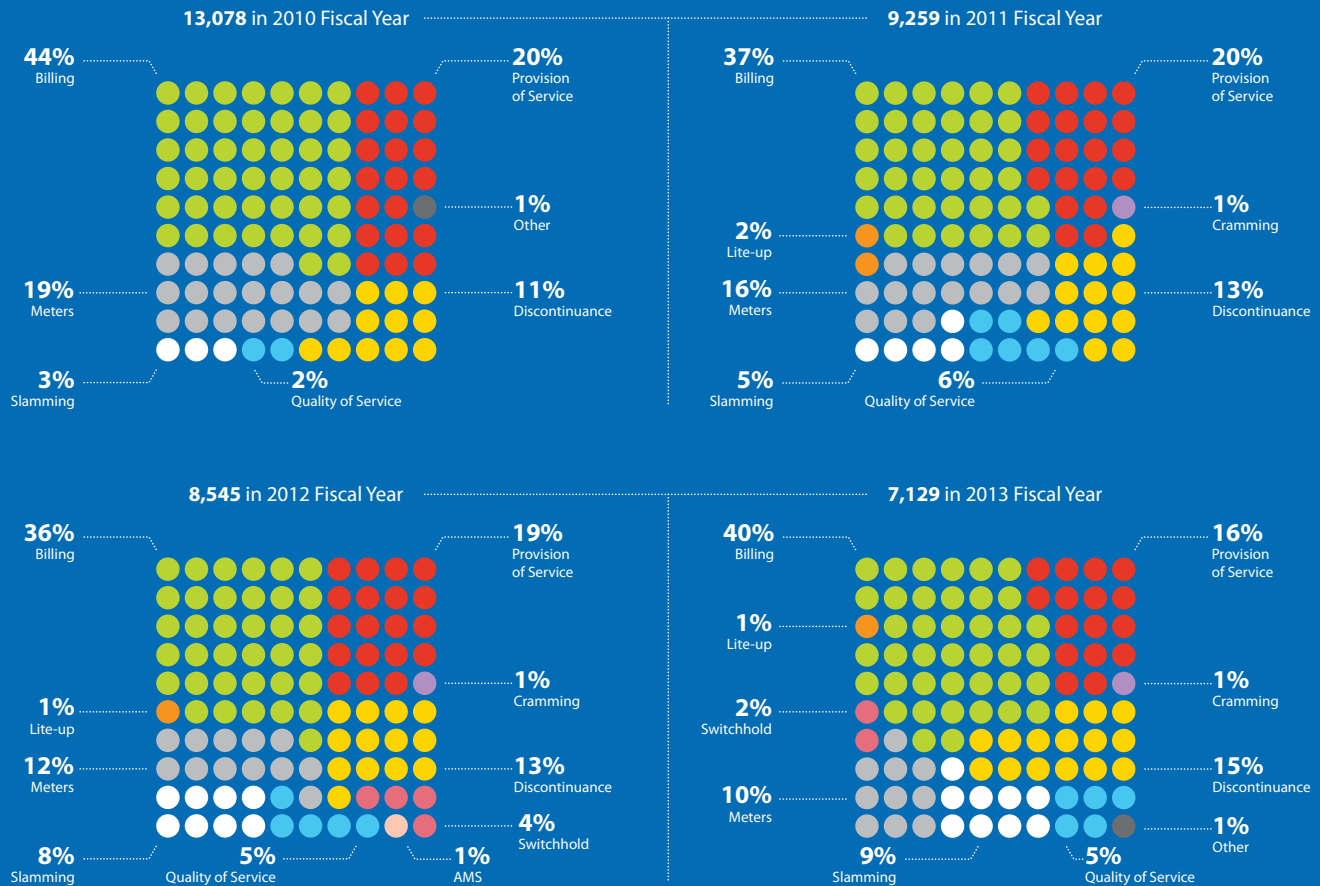
Customer Complaints

GOOD NEWS / BAD NEWS STORY

Electricity complaints continue decline in 2012, but still more than five times greater than pre-deregulation average.



Electricity Complaints Filed with Texas PUC



How to Lodge a Complaint with the PUC

Under the PUC's complaint process, customers can file a complaint against a company with the agency's Office of Customer Protection. Agency employees then make an inquiry with the company, which has 21 days to respond. A PUC investigator evaluates the company's response to determine whether it failed to follow the law.

Customers wishing to file complaints regarding their electric service can do so through the agency's Office of Customer Protection, which can be reached at 1-888-782-8477, by email at customer@puc.state.tx.us, or online at <http://puc.state.tx.us/consumer/complaint/Complaint.aspx>.

Texans can also review specific complaint data for competitive electric providers at <http://powertochoose.com>. TCAP recommends that consumers always check this complaint data when shopping for electricity.

Stay informed on the latest news in Texas energy and electricity at TCAP's online newsletter, at TCAPTXX.com, or at RechargeTexas.com.



Appendix C: Excess Mitigation Credits

The Public Utility Commission responded to the collapse of House Bill 2107 in 2001 with a decision that ultimately increased prices for ratepayers. In November, not long after the end of the 77th legislative session, the PUC ordered the payment of what became known as “excess mitigation credits.” Termed “EMCs” in the alphabet soup of ratemaking, these credits represented the value of refunds that would have gone back to ratepayers had the Legislature adopted HB 2107 (the start of this section). But instead of flowing back to ratepayers, the PUC sent the money (through an indirect process) to electric retailers. These retailers had never suffered from the stranded cost overcharges, and yet they would now benefit from them. In many cases, the retailers were financially affiliated with the companies that were ordered to pay the EMCs.

HOW THEY WORK

Under the PUC-initiated excess mitigation credit ruling, generation companies affiliated with the incumbent monopoly provider that presumably over-collected for stranded costs were directed to return the money (in the form of EMCs) to transmission and distribution companies. Those transmission and distribution companies, in turn, were directed to make a corresponding reduction in rates they charged to electric retailers. But the retailers were not required to pass those savings onto customers. In fact, in some cases they were actually prohibited from doing so.

Remember: under SB 7, retailers affiliated with the state’s traditional utilities charged the Price To Beat rate. Setting aside adjustments for fuel costs, the Price To Beat was a fixed rate. Customers on the Price To Beat paid that rate and only that rate — no more, no less — which meant they could not receive EMCs. But the Price To Beat retailers who served them were receiving almost all of the excess mitigation credits because these retailers then controlled 85 to 95 percent of the residential market. Said another way: the Price To Beat retailers took the EMCs but were prohibited by rule from passing along the benefit to their residential customers.

Because the retailers charging the Price To Beat typically remained affiliated with the incumbent generators who owed the excess mitigation credits, the effect of the PUC order was to require companies to take money due to ratepayers and instead pay it to a separate arm of the same company, a transfer sometimes characterized as moving ratepayer money from one company pocket to another.

The PUC ordered the collection of \$55 million in excess mitigation credits from Central Power & Light in South Texas, \$1.24 billion in excess mitigation credits from the predecessor of Houston’s CenterPoint Energy and \$888 million in excess mitigation credits from TXU in North Texas. Although most of this money ended up with retail electric providers affiliated with the state’s traditional utilities, some of it ended up with competitive electric providers. The PUC argued that the competitors could use the money to lower prices and potentially steal away more customers. But there’s little evidence that this worked or that these competitive retailers did anything but pocket the windfall.

The Public Utility Commission’s EMC rule also led to even greater consumer expenditures in 2005, during final stranded cost decisions that year. (For more about stranded costs, see page 66.)

Under Senate Bill 7, consumers would end up paying: the expense of excess mitigation credits from which they derived no benefit, the expense of reimbursing energy companies for supposedly uneconomic investments that actually ended up becoming quite profitable for those companies, and the expense of overpriced power in the restructured market.

Here's how consumers lost with Excess Mitigation Credits and Stranded Costs:

1. Senate Bill 7 contemplated that as a result of deregulation, ratepayers eventually would owe stranded cost payments to utilities. The 1999 legislation provides methods for mitigating presumed future stranded costs by allowing utilities to overcharge ratepayers in the run-up to deregulation. For ratepayers in the Houston area, stranded costs will add about \$7.30 to monthly bills for many years to come. Ratepayers in other parts of the state also face hefty stranded cost awards. (For more about stranded costs, see the chart on page 66.)
2. But in 2001, the PUC made a determination that utilities instead could face "negative" stranded costs — and as a consequence, it appeared that ratepayers were needlessly making overpayments to utilities.
3. This prompted the PUC to order generators to surrender the stranded-cost related overcharges they had received to that point. The refund of these overcharges became known as "excess mitigation credits." But because the Price To Beat prohibits any discounts, most of the credits went into the pockets of the electric retailers. Most customers weren't able to benefit.
4. Beginning in 2004, the PUC reversed course again and found that electric companies did not face negative stranded costs but rather positive ones. That is, the PUC agreed with electric companies — despite great evidence to the contrary — that key generating assets lost value in the transition to deregulation.
5. This finding, in turn, led the PUC to determine that the excess mitigation credits awarded in 2001 were unwarranted and should be returned.
6. The value of those credits — more than \$2 billion — was added to already questionable stranded cost bills faced by ratepayers. This meant that ratepayers, most of whom never received the benefit of the excess mitigation credits in the first place, were nonetheless on the hook for paying them back. All told, the value of stranded costs in Texas (including the value of the excess mitigation credits) has been estimated at more than \$6.5 billion. For ratepayers in the Houston area, stranded costs will add more than \$7 to monthly bills for many years to come. Ratepayers in other parts of the state also face hefty stranded cost charges. (For more information about stranded costs, see chart on opposite page).
7. Meanwhile, the nuclear and coal plants that created billions of dollars in presumed stranded costs for electric companies end up becoming quite profitable in the newly restructured market. Instead of becoming uneconomic burdens, the plants proved to be efficient producers of relatively inexpensive power. But under the structure of the deregulated market, such relatively inexpensive coal and nuclear power got re-priced for retail customers as if generated by more costly natural gas-fired plants. Ratepayers lost again.

Appendix D: Unbundling

Under Senate Bill 7 vertically-integrated utilities operating within the ERCOT region were required to split into three discrete entities: generation companies, the still regulated transmission and distribution utilities, and retail electric providers. Under this “unbundling” provision, these entities were required to function separately — even if they remained under the same corporate ownership.

GENERATION COMPANIES

Under deregulation, generation companies are expected to compete with one another on price. However, some generation companies have begun pressing for price supports, claiming the current deregulated system is not providing them with enough revenue to justify new investment.

TRANSMISSION AND DISTRIBUTION UTILITIES

The power produced by generation companies travels across the system of wires owned by transmission and distribution utilities. These “wires” companies retain their monopoly status, and remain regulated under Senate Bill 7. The wires companies in recent years have obtained legislative changes that allow them to hike rates more rapidly, and with less regulatory oversight. These extra charges are passed onto retail electric providers, which then pass them onto end-use customers.

RETAIL ELECTRIC PROVIDERS

Senate Bill 7 allows for competitive Retail Electric Providers to sell power directly to home consumers. REPs are free to set their own price for power.

Texans have remained confused about the deregulated system. An industry survey in 2011 found that a majority of Texans did not clearly understand the division between their deregulated retail electric provider and their regulated transmission and distribution provider. Complaints filed against electric companies with the PUC also have increased significantly over pre-deregulation levels.



How electricity flows to its users

Major regulatory players



PUC (Public Utility Commission of Texas)

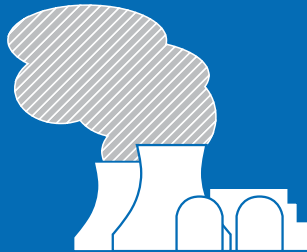
- Where applicable, sets rules for the deregulated electricity market
- Regulates investor-owned utilities within Texas but outside of the ERCOT service territory
- Implements electric and telecommunications legislation
- Oversees development of regulated transmission and distribution system for electricity
- PUC commissioners are appointed by the governor



ERCOT (Electric Reliability Council of Texas)

- A quasi-governmental organization
- Funded by ratepayers but technically a non-profit corporation managed by market participants
- Is overseen by the PUC

How electricity is sold (in a deregulated market)



Power Plant

Power generation companies own and operate power plants, including nuclear plants or those fueled by natural gas, coal or from renewable resources such as the wind. Power generation companies sell their power in the wholesale market, where prices are deregulated.



Retail Electric Providers

REPs purchase electricity from power generation companies and sell that power to residential and business consumers. Electricity at the retail level is deregulated, meaning that REPs are free to set their own prices.



Transmission and Distribution Utilities

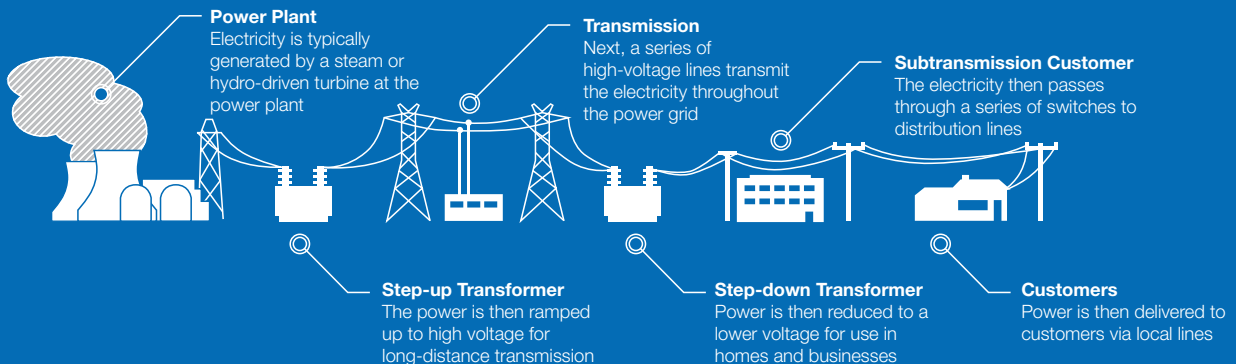
Transmission and distribution utilities own and operate the poles and wires that transport electricity in Texas. TDUs are monopolies, and remain regulated by the Public Utility Commission.



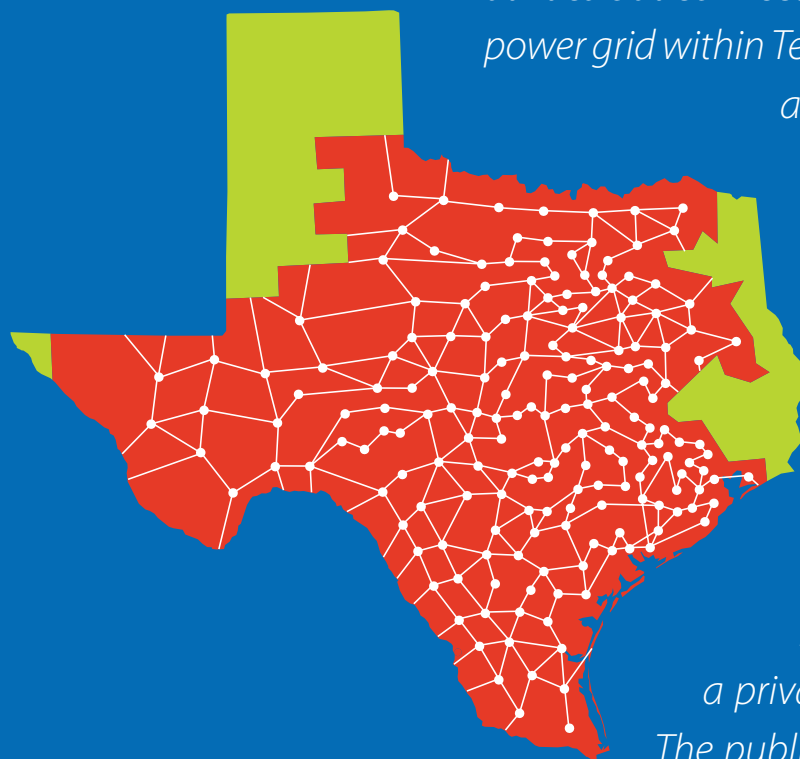
Your Home

Home consumers in deregulated areas of the state such as Houston or the Dallas/Fort Worth areas can choose between different electricity deals.

Flow of electricity



Appendix E: Electric Reliability Council of Texas



The network of transmission lines owned by different utilities but connected to each other forms a single power grid within Texas. The organization that manages most of this network is known as ERCOT, the Electric Reliability Council of Texas. There are two other power grids in the United States — an Eastern grid and a Western grid — but ERCOT is an island unto itself with only limited connections to the other grids. ERCOT is not a government agency, nor a private business, nor a court of law. The public does not elect its leaders, and yet those leaders make some of the state's most important public policy decisions. ER-

COT does not spend tax dollars, and yet its policies impact what is inside every Texan's wallet. ERCOT decisions impact the health and welfare of all Texans, can benefit or greatly undermine the state's economy, and can mean the difference between massive blackouts or reliable service.

WHAT IS ERCOT?

Technically a non-profit corporation, ERCOT was created by the state in 1970. It has responsibility for managing the flow of power across 38,000 miles of transmission lines to more than 21 million Texans. It facilitates operations of the wholesale electricity market, supervises transmission planning, ensures that there is always adequate power on the grid and takes action to minimize congestion on transmission lines.

ERCOT has an approximately \$171 million annual budget, which is financed through charges on electric bills. Stakeholders — that is, representatives of electric generators, transmission companies, consumers and other interested market participants — set ERCOT policy and determine the rules by which the wholesale market operates.

WHAT ARE ERCOT'S RESPONSIBILITIES?

ERCOT functions both as the technical operator for the transmission grid and a decision-making organization that creates rules for the wholesale electricity market.

As an independent system operator, ERCOT employs technicians and engineers at two control centers in the Austin area. Using complex computer systems, ERCOT manages the flow of electricity on the grid by continually ordering generators to ramp up or ramp down production to match the amount of power demanded by consumers during any given 5-minute period. Because of the physics of electricity, if the amount of power scheduled to be consumed is not exactly in sync with the amount of power to be produced then load and generation become unbalanced, and blackouts can result.

ERCOT technicians also take actions to control congestion on transmission lines. During emergency situations, these actions can include the curtailment of electricity to certain big customers and the implementation of limited rolling blackouts.

As a decision-making forum, ERCOT depends upon interested market participants to study, debate and ultimately recommend or reject complicated wholesale market rules. These stakeholders — men and women representing power generators, commercial customers, industrial users, retailers and other interested parties — make recommendations to the full ERCOT board, which in turn makes binding decisions for the market.

ERCOT Board decisions can be overturned only by the Texas Public Utility Commission. The PUC also has limited authority over the ERCOT budget and general operations.

Because ERCOT's transmission grid serves only Texas and does not cross state lines, there is minimal federal jurisdiction that applies to ERCOT's day-to-day market operations.

HOW DOES ERCOT MAKE DECISIONS?

The most important and frequently made decisions by stakeholders involve ERCOT protocols, which are the complicated rules that govern the wholesale electricity market. Revisions to ERCOT protocols typically begin within a work group or task force. ERCOT work groups and task forces are comprised of interested stakeholders who make decisions by consensus. From there, recommended protocol changes go to the "Protocol Revision Subcommittee," then to the "Technical Advisory Committee" and finally to the ERCOT Board of Directors, which usually has the last word.

The ERCOT Board of Directors is made up of 16 men and women, most of whom represent various segments of the market. ERCOT stakeholders from each of those segments elect their own Board representatives. Non-voting board seats are reserved for the chief executive officer of ERCOT and the chairperson of the Texas Public Utility Commission.

Appendix F: Understanding Texas Wind Power

**Originally Published as a TCAP Snapshot Report, Aug. 2, 2012.*

The Lone Star State leads the nation in wind-generated power. *With an installed capacity totaling 10,648 megawatts in 2011, Texas boasts a fleet of wind generators dwarfing that in any other state. But while it appears likely that wind power may lower some wholesale energy costs, such potential savings may be outweighed by other necessary expenses. Wind power also presents tough challenges for the operators of the state's power grid. The Texas Coalition for Affordable Power offers this mini-report as a quick and easy primer on these and other issues. What you'll find here are key statistics, historical context – and a wide variety of views from the experts. As a matter of policy, TCAP supports the use of wind power, but urges regulators, lawmakers and other decision makers to remain mindful of the associated costs and reliability challenges.*

WIND POWER AND THE ENVIRONMENT

Various academic studies have concluded that the use of wind power reduces potentially harmful Carbon Dioxide (CO₂) emissions. For instance, a study by R. Gross of the Imperial College of London states unambiguously “that wind energy can displace fossil fuel-based generation, reducing both fuel use and carbon dioxide emissions.” Similarly, the National Renewable Energy Laboratory, in a 2008 report for the U.S. Department of Energy, noted that “choosing to build wind projects results in CO₂ reductions from fewer new coal plants built and less natural gas consumption.” A separate report by the U.S. Department of Energy examining the feasibility of expanded wind energy use through 2030 also predicts related drops in CO₂ emissions.

However, many of the relevant studies assume that units of CO₂-free electricity created by wind turbines have the effect of offsetting units of fossil-fuel electricity on a one-to-one basis. Separate research has found that this is not necessarily the case. In a 2006 study, the Institute of Electrical and Electronics Engineers (a non-profit professional association) found that fossil-fuel plants that provide backup power for wind generators must operate in ways that produce more emissions than they would produce under ordinary circumstances. “Thus, it may be that some environmental benefits from wind power may be negated

by an increase in emissions from combustion plants accommodating wind generation,” the report stated. Similarly, physicist and mathematician Herbert Inhaber, in a report published in the Renewable and Sustainable Energy Reviews, concludes that “as wind penetration increases, the CO₂ reduction will gradually decrease due to cycling of fossil fuel plants” that must be kept running and ready to produce energy when the wind stops blowing.

DOES WIND POWER SAVE MONEY FOR CONSUMERS?

Whether wind power results in savings or extra costs for consumers is a question of perspective. For instance, wind generators have zero fuel costs and receive public subsidies in the form of tax credits for up to two-thirds the value of wind turbines, according to some estimates. As a consequence, wind generators often bid their power into the state's spot wholesale energy market at levels below what would otherwise be the prevailing marginal cost of energy set by the state's natural gas plants. Because of the nature of the deregulated electricity market, these lower wind prices on the spot market can then put downward pressure on wholesale spot energy prices overall.

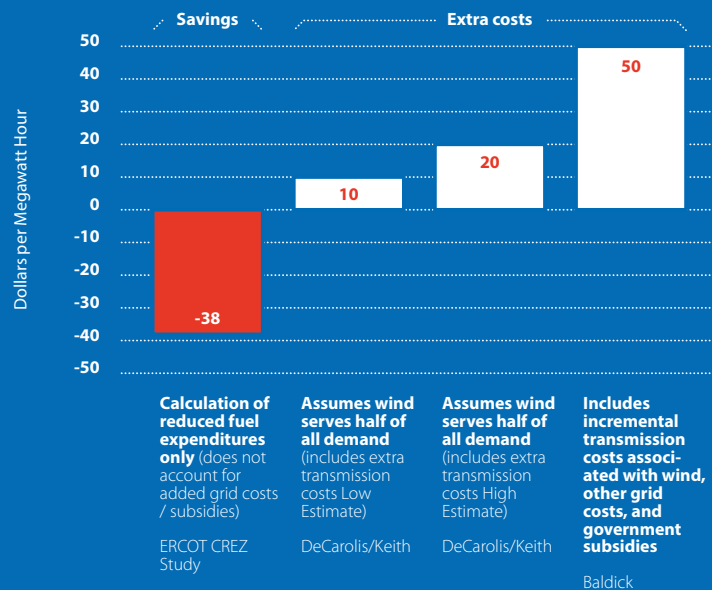
This effect is most often observed in West Texas, where there exists a high concentration of wind turbines and

insufficient transmission lines to move that energy into more populated areas of the state. West Texas wind producers even occasionally bid their power into the wholesale spot energy market at negative prices. A 2008 study by ERCOT concluded that Texas should save \$38 per megawatt-hour in average fuel costs from wind power, assuming the completion of new power lines to serve those wind turbines in West Texas. That would equate to monthly savings of about \$38 for a typical household, assuming the savings trickle down to the retail level.

However, such calculations do not tell the whole story. According to a 2008 report from the Texas Comptroller of Public Accounts, wind generators receive larger federal subsidies, as measured as a proportion of their sales, than do natural gas and coal-fired generators. Consumers also must pay the incremental cost of wind-related transmission construction and grid-reliability services. Joseph F. DeCarolís and David W. Keith, writing in the 2006 edition of *Energy Policy*, conclude that such incremental costs will only increase as the use of wind energy also increases. “We find that, with somewhat optimistic assumptions about the cost of wind turbines, the use of wind to serve 50 percent of demand adds 1-2 cents per kilowatt-hour to the cost of electricity, a cost comparable to that of other large-scale low-carbon technologies.” Ross Baldick, a professor in the Department of Electrical and Computer Engineering at the University of Texas-Austin, calculates that the total unsubsidized cost of new wind energy in Texas at about \$105-\$110 per megawatt-hour. This figure includes the incremental cost of transmission lines to serve wind generators and extra charges to account for the intermittent nature of wind. He also accounts for the cost of federal tax subsidies. Thus, “wind adds about \$50 per megawatt-hour to costs,” concludes Dr. Baldick.

Wind Power: Saving money for Texans or costing more?

DIFFERENT ASSUMPTIONS, DIFFERENT CONCLUSIONS



7 KEY THINGS TO KNOW ABOUT WIND ENERGY

FACT #1

TEXAS LEADS THE NATION FOR WIND POWER

Texas in 2011 was home to more than 10,000 megawatts of installed wind capacity, which is nearly three times that of any other state. Texas has more installed wind power capacity than all but five countries worldwide.

FACT #2

WIND POWER HAS ZERO FUEL COSTS

The wind blows free, which means that wind generators can sometimes bid into the wholesale spot energy market at very low prices. Because of federal tax credits, wind generators sometimes bid their energy into the spot market at negative prices. This sometimes reduces overall spot market prices for electricity. In Texas, in particular in the western part of the state where there exists a high concentration of wind generators.

FACT #3

FACTORS OTHER THAN FUEL CAN DRIVE UP THE FINAL PRICE FOR WIND POWER

Consumers pay a number of incremental costs associated with wind energy, including the costs of extra backup power because wind turbines can quit suddenly when the wind stops blowing. Wind energy also receives taxpayer-supported subsidies and Texans are on the hook for billions of dollars in wind-related transmission projects. Also, because of the structure of the deregulated wholesale market in Texas, wind generators that submit relatively low-cost bids into the spot market typically receive higher-than-bid prices.

FACT #4

DEVELOPMENT OF TRANSMISSION FOR TURBINES WILL COST BILLIONS MORE THAN ANTICIPATED

ERCOT initially estimated the cost of transmission lines to serve the state's growing wind fleet at \$4.9 billion. Those projected costs were understated by nearly \$2 billion. All told, every customer within the areas of the state's principal power grid is on the hook for more than \$1,000 to pay for the transmission lines.

FACT #5

WIND POWER CAN PROVIDE ECONOMIC BENEFITS TO LOCAL COMMUNITIES

Texas landowners that have wind turbines on their property typically receive ongoing compensation in the form of royalties, operating fees or monthly production payments. Landowners receive one-time payments for electric transmission lines that pass across their land, plus damages for lost property value. As with the case for other sorts of generating plants, the construction, maintenance and operation of wind generators also creates jobs, which in turn produces income for local businesses and communities.

FACT #6

WIND GENERATION CANNOT BE DISPATCHED AS RELIABLY AS MANY OTHER SOURCES OF ENERGY

For planning purposes, the organization that operates the state power grid counts on the state's wind power fleet to produce at less than 9 percent of its capacity during peak summer periods. Official figures show that wind comprises nearly 12 percent the overall generation capacity in Texas, but wind generators provide just 1.1 percent of available capacity during summer peaks. This makes wind power, at peak, much less dependable than energy from natural gas-fired plants, coal plants, nuclear plants or even biomass sources.

FACT #7

WIND POWER CANNOT COMPLETELY REPLACE OTHER GENERATION SOURCES

Because of the variability of the wind, fossil-fueled power plants are needed to provide replacement power. These plants are typically fueled by natural gas. This means that wind power can periodically displace the use of fossil-fuel plants, but with current technology cannot completely displace the construction of them.

WIND POWER AND RELIABILITY CHALLENGES

By its very nature, wind is fickle. It blows one moment, cuts off the next.

Because ERCOT must keep electricity supply and demand exactly balanced at all times on the grid, this intermittent nature can create challenges for the organization. In February 2008 a sudden drop off of wind coupled with other factors nearly led to blackouts. ERCOT also faced another near reliability crisis in January 2010 caused, in part, by the variability of wind.

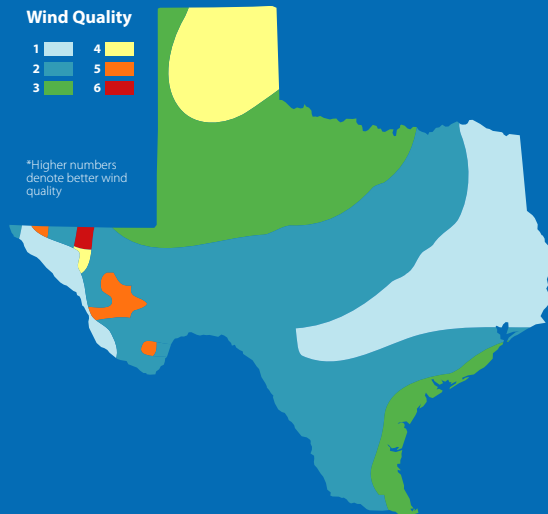
The reliability challenges posed by the state's growing reliance on wind power have been acknowledged by the Texas Public Utility Commission, ERCOT and outside experts. In its 2011 Scope of Competition Report to the Texas Legislature, the PUC also noted that wind generators typically do not provide the same level of technical support to bolster grid reliability as is provided by traditional generators. Jay Zarnikau, an adjunct professor at the LBJ School of Public Affairs at the University of Texas-Austin, has noted that many wind generation operators have had little prior experience with electric operations. ERCOT has stated that such a "lack of understanding regarding the details of certain operational procedures ... produced inconsistent results in unit responses to instructions and introduced operational challenges" for the organization's operators.

However ERCOT also has taken steps to mitigate many of these challenges. For instance, the grid operator adopted more advanced wind forecasting methods after the January 2010 incident. As a matter of policy, ERCOT also deliberately under-forecasts wind power output while simultaneously over-forecasting demand. The PUC has noted that various technical improvements on new turbines and the retrofitting on old ones may help mitigate some of the challenges.



Wind Classification

Source: seco.cpa.state.tx.us



FROM THE STATE ENERGY CONSERVATION OFFICE:

"The Panhandle contains the state's greatest expanse with high quality winds. Well-exposed locations atop the caprock and hilltops experience particularly attractive wind speeds. As in all locations throughout the state, determination of areas appropriate for development must include consideration of environmental and social factors as well as technical viability.

South of Galveston, the Texas coast experiences consistent strong sea breezes that may prove suitable for commercial development.

The mountain passes and ridgetops of the Trans-Pecos exhibit the highest average wind speeds in Texas. Since the wind in mountainous terrain can change abruptly over short distances, the best wind farm locations in West Texas are quite site specific."

THE DEVELOPMENT OF WIND POWER IN TEXAS

The use of wind power in Texas has grown substantially over the last decade — largely the result of important state mandates, the planned construction of expensive transmission lines, and favorable treatment for wind generators in the federal tax code.

THE MANDATE

Besides deregulating the state's retail electricity market, Senate Bill 7, adopted by the Texas Legislature in 1999, also included requirements for the use of renewable energy by retail electric providers. Companies that exceeded the mandate gained an ability to sell renewable energy credits to companies that fell short.

This credit program was designed to foster the creation of 2,000 megawatts of renewable energy by 2009, or enough to power about 1.6 million homes. But Texas easily surpassed the original target and so the Legislature adopted in 2005 Senate Bill 20 setting forth new goals: 3,272 megawatts of renewable energy by 2009, 4,264 megawatts by 2011, 5,256 by 2013, 5,880 by 2015 and 10,000 by 2025. Texas exceeded those goals as well.

FEDERAL TAX INCENTIVES

According to calculations by renewable energy expert Ed Feo, wind energy developers have received tax breaks valued at as much as two-thirds of the capital cost of wind turbines. Others have placed a smaller value on such subsidies. In sheer dollars, refined coal and nuclear power receive more federal energy subsidies, but wind power leads other energy sources for the size of federal subsidies as a ratio to energy output.

However, there remains some doubt whether Congress will extend the important federal production tax credits for wind which will expire at the end of 2012. This raises questions about the future profitability of wind power. Travis Miller, a Chicago-based utility analyst at Morningstar, Inc., estimates that natural gas commodity prices must rise above \$6.50 per million British thermal units for unsubsidized wind generation to remain profitable. The United States Energy Information Administration projects that natural gas prices will remain below that level for many years to come.

TRANSMISSION LINES

Senate Bill 20, in 2005, also called for the creation of special zones, known as Competitive Renewable Energy Zones, to mark the site of future transmission construction to serve wind generators. The Public Utility Commission embarked on a vigorous process to delineate the borders of these zones, eventually settling on a plan that would support 18,500 megawatts of new wind generation. In establishing this plan the PUC used estimates, produced by ERCOT, that indicate the lines would cost \$4.9 billion. Cities and other groups warned that the ERCOT numbers were flawed because they did not take into account financing costs, inappropriately assumed straight-line paths for the transmission construction, and other factors.

It later became clear that the cities' concerns were quite valid. In 2011, a PUC consultant determined that the CREZ lines will end up costing nearly \$2 billion more than original estimates, for a total of \$6,789,775.933. All told, these new lines will cost the state's residential, commercial and industrial users more than \$1,000 each. Notes one expert: "Texas could have built 6,900 megawatts of new gas-fired capacity for what the state is now spending on wind-related transmission alone."

The Cost of Transmission Lines to Serve Wind Energy

Source: Elizabeth Souder, "Texas' multibillion dollar cost to build wind energy lines raises doubts," Dallas Morning News, Dec. 5, 2011

Texas is set to spend approximately \$7 billion to build transmission lines to serve wind generators in West Texas and the Panhandle. What else could \$7 billion pay for?

- The electricity bills for every household in Texas for about seven months.
- The construction of about 7,000 megawatts of natural gas-fired power plant generation — or enough extra capacity to keep the lights on during an extreme heat emergency.
- 175 million fluorescent light bulbs with LED lights, which could provide enough energy savings to shut down 10 coal plants.



End notes

EARLY YEARS

This section relies on various journalistic sources, including a Sept. 23, 2006, article by Steven T. Dennis in *Congressional Quarterly*, entitled “The Broken Promise of Electricity Deregulation”; a deregulation timeline that appeared in the Nov. 22, 2007 edition of the *Galveston Newspaper, The Daily News*; a Dec. 1, 2000, article by Mark Gladstone and Brandon Bailey in the *San Jose Mercury News* entitled “Deregulation: Who Were The Power Brokers?”; a May 7, 2001, article by Sam Stanton in the *Sacramento Bee* entitled “Californians Reflect on Path Taken toward Deregulation of Electricity Market”; and a May 23, 1997, article by Welch Suggs in the *Dallas Business Journal*, “Failure of electric deregulation disappoints Nye.”

This section also draws from a Jan. 20, 1999, press release from former state Sen. David Sibley; the book “Regulation: Economic Theory and History” by Jack High (*University of Michigan Press*, 1991); the January 1999 report from the Texas Public Utility Commission, “The Scope of Competition in the Electric Industry in Texas”; and Volume 1 from the 1997 report from the Texas Public Utility Commission, “Electric Power Industry Scope of Competition.”

The subsection entitled “The Senator and The Napkin Doodle” is based on an anecdote found in a May 7, 2001, article by Sam Stanton in the *Sacramento Bee*. The article is entitled: “Californians Reflect on Path Taken toward Deregulation of Electricity Market.”

YEAR: 1999

The annual 1999 section draws from various journalistic sources, including a Feb. 12, 1999, article in the *Corpus Christi Caller-Times* by Anna Tinsley, “Electric Deregulation Bill Filed”; a July 17, 2008, article in the *Wall Street Journal* by Rebecca Smith, “Deregulation Jolts Texas Electric Bills”; a March 9, 1999, article in the *Dallas Morning News* by Stephen Power, “Electric Deregulation sent to state Senate”; an April 28, 1999, article in *Megawatt Daily*, “Wolens and Texas Could Err by Not Passing Dereg bill”; and several articles in the *Fort Worth Star-Telegram*, including “Electric Overhaul Clears First Hurdle” on March 9, 1999; “Utilities overhaul pushed” on January 18, 1999; “Texas Senate Approves Bill for Electric-Industry Competition” on March 18, 1999; “Compromise reached on deregulation

bill” on May 20, 1999; and “Poll reveals ratepayers’ concern,” March 11, 2001. The section also draws from the State Electric Profiles found at the U.S. Energy Information Administration.

YEAR: 2000

This section draws from various journalistic sources, including a Dec. 29, 2000, article by David Lazarus in the *San Francisco Chronicle* entitled “Summer Ushered in a Power Crisis”; and two articles from the *Fort Worth Star-Telegram*, “Transmission Line Shortage Inhibits Texas Electric Deregulation, Expert Says” from Aug. 23, 2000, and “Judge Rules against Dallas-Based Utility TXU Electric on Stranded Costs” from September 20, 2000. This section also draws information from page 21 of the 2001 edition of the “Scope of Competition in Electric Markets in Texas,” published by the Texas Public Utility Commission.

The subsection entitled “The Worst They’d Seen in 30 Years” is based on a Sept. 23, 2006, article in *Congressional Quarterly Weekly* entitled “The Broken Promise of Electricity Deregulation”; a Dec. 29, 2000 article in The *San Francisco Chronicle* entitled “Summer ushered in a power crisis that promises only to get worse”; and page 4 of “Scope of Competition in Electric Markets in Texas” published by the PUC in 2001.

YEAR: 2001

This section draws largely from reporting in the *Fort Worth Star-Telegram*. Articles include “Texans wary of decontrol of electricity; Poll reveals ratepayers’ concern” from March 11, 2001; “Lawmakers Urge New Limits on Texas Electric Deregulation” from Jan. 25, 2001; “PUC chief favors electricity refunds” from March 28, 2001; “Action likely kills refunds on utility bills; A Wichita Falls lawmaker blocks further consideration of the measure” from May 11, 2001; “Reports say grid facing big risk” from Oct. 11, 2001; “Billing errors are impeding test of deregulation, officials say” from July 20, 2001; “Utilities say bills they got had ‘bigger than big’ errors” from August 23, 2001; “Electric council shrouds budget” from Nov. 24, 2001; “Electric-Price Spikes on Texas’ First Day of Deregulation Called a ‘Mistake’” from Aug. 2, 2001; “Another price spike in Texas’ deregulation experiment” from Aug. 8, 2001; “Advisers Warn Texas Electric Deregulation System Has Flaws” from March 7, 2001; “Part of Texas’ electric market mysteriously shuts down 4 hours”

from Aug. 10, 2001; "Price spikes linked to lack of power lines" from August 14, 2001; and "Texas Utility Surrenders Claim on Billions of Dollars," Dec. 29, 2001.

It also includes material from the *Houston Chronicle*, including the Feb. 7, 2001 article by Janet Elliott, "Customers of Houston-Based Reliant Energy Get to Choose New Power Supplier"; and a July 31, 2001, article by Laura Goldberg, "Texas Launches Preview of Electricity Deregulation Program." It includes material from an article that appeared on March 6, 2006, in *Electric Utility Week*, "CenterPoint swings to \$252 million profit in 2005 reflecting '04 disallowance of stranded costs"; and material from the "Scope of Competition in Electric Markets in Texas," 2001, published by the Texas Public Utility Commission.

The "Excess Mitigation Credits" subsection draws from the "Scope of Competition in Electric Markets in Texas, 2003," pages 38 and 39, by the Public Utility Commission of Texas; and a response brief in the case "Public Utility Commission of Texas v. AEP Texas Central Company," dated July 10, 2006.

The subsection entitled "The Enron Collapse" draws from "Enron's Chief Executive Quits After Only 6 Months in Job," *New York Times*, Aug. 15, 2001; "A Self-Inflicted Wound Aggravates Angst Over Enron," *New York Times*, Sept. 9, 2001; "Enron Reports \$1 Billion In Charges And a Loss," *New York Times*, Oct. 17, 2001; "Enron Tries To Dismiss Finance Doubts," *New York Times*, Oct. 24, 2001; "Enron Ousts Finance Chief As S.E.C. Looks at Dealings," *New York Times*, Oct. 25, 2001; "Enron Credit Rating Is Cut, And Its Share Price Suffers," *New York Times*, Oct. 30, 2001; "Enron's Collapse: The Overview; Enron Corp. Files Largest U.S. Claim For Bankruptcy," *New York Times*, Dec. 3, 2001; "Once-Mighty Enron Strains Under Scrutiny," *New York Times*, Oct. 28, 2001; "Former Executive Fills Spot on Texas Agency that Is Overseeing Deregulation," *The Houston Chronicle*, June 14, 2001; and "Energy czar had Lay's backing," *Fort Worth Star-Telegram*, Feb. 7, 2002.

YEAR: 2002

This section draws from various journalistic sources, including a Dec. 1, 2001, article by Phil Magers of *United Press International* entitled "Texas launches electric choice Jan. 1"; a May 7, 2002, article by the *Associated Press* entitled "Enron Says it is under investigation"; and an Aug. 24, 2002, article by Michael Davis of the *Houston Chronicle*, "Texas Utility Panel Approves Reliant Energy's 5.8 Percent Rate-Hike Request."

It includes material from two articles that appeared in

the *Dallas Morning News*: "TXU asks commission to raise electricity rates" from April 24, 2002; and "PUC might fine Enron for power overscheduling," June 4, 2002.

It includes material from two articles by Claudia Grisales of the *Austin American-Statesman*: "Power grid operator's spending under fire," June 12, 2002; and "New Power transferring customers Energy provider, which served 80,000 in Texas, expected to file for bankruptcy," June 11, 2002.

This section also draws from several articles that appeared in the *Fort Worth Star-Telegram*, including "Power rate may not be as low as envisioned" from Dec. 7, 2001; "Dallas-Based Utility Parent Seeks to Increase Electricity Costs by 5 Percent" from April 24, 2002; "Ready or Not, Deregulation starts" from Jan. 2, 2002; "Report Lists Snags in Texas Electric Deregulation" from Jan. 11, 2002; "Regulator urges PUC to delay state ad campaign" from April 12, 2002; "Budget Items for Texas Power-Grid Operator Spark Controversy" from April 4, 2002; "Texas' Electric-Management Fee May Increase" from Aug. 21, 2002; "Budget Items for Texas Power Grid" from April 4, 2002; "Errors profit some electric companies" from Dec. 17, 2001; "Enron admits PUC inquiry" from April 17, 2002; "Texas Utility Says It Expects No Profit from Deregulation Flaw" from May 2, 2002; "New Power files for bankruptcy" from June 12, 2002; "Texas Public Utility Commission Seeks Huge Fine against New Power" from Sept. 14, 2002; and "Dozens of Texas Cities Sue over State Regulators' Role in Electric Rates," May 7, 2002.

This section references material that appeared on page 14 of the Public Utility Commission's "Scope of Competition Report in Electric Markets in Texas, 2003." It also contains material from the report entitled "Unplugged, High Prices Under Texas Deregulation," released in November 2008 by the Cities Aggregation Power Project (now Texas Coalition for Affordable Power).

The subsection entitled "Enron's Illegal Market Manipulation" draws from these two articles: "The Fall of Enron: Enron Chief Trader vows to tell all; Officials hope guilty plea, conviction boost probe of Calif. Energy Debacle," David Ivanovich and Tom Fowler, *Houston Chronicle*, Oct. 18, 2002; and "Ex-Enron Trader gets probation," Kristen Hays, *Bloomberg News*, March 23, 2007. It also includes information taken from the Plea Agreement of Timothy Belden, United States District Court, Northern District of California, San Francisco Division, attachment 1; and the legal document "Petition of El Paso Electric Company to Reconcile Fuel Costs before the State Office of Administrative Hearings," dated May 9, 2003.

YEAR: 2003

This section draws from various articles that appeared in the *Dallas Morning News*, including “TXU Corp. Seeks to Increase Electricity Rates in North Texas” from Jan. 25, 2003; “More Switching Could Follow TXU’s Electricity Rate Hike, Experts Say” from Aug. 22, 2003; and “Power play over grid intensifies,” Dec. 18, 2004. All three articles were written by Sudeep Reddy.

Referenced articles from the *Fort Worth Star-Telegram* include “Electric rate rollback proposed” from March 15, 2003; “Houston Lawmaker Pushes More Electric Deregulation” from March 14, 2003; “The taxing task of defining ‘tax’” from Sept. 9, 2003; “PUC grants TXU 12% rate increase” from March 6, 2003; “Electricity plan may add to Metroplex bills” from Oct. 19, 2003; and “Texas’ Top Power Grid Official Resigns,” Oct. 21, 2003.

This section also includes material taken from the “Scope of Competition in Electric Markets in Texas, 2005,” published by the Texas Public Utility Commission. Note especially pages 32, 33, 65, 66 and 68.

YEAR: 2004

This section draws from a July 4, 2004 article from the *Associated Press*, “State investigates suspicious deals at ERCOT” and several *Dallas Morning News* articles, including “Texas Regulators Investigate Security Issues at Power Grid” from June 3, 2004 and “ERCOT cuts ties to contractor” from June 10, 2004. Also included is material drawn from the Oct. 5, 2005 edition of the *Houston Chronicle*, “Deregulation helps buyout firms, if not the ratepayers” by Loren Steffy; and material drawn from a Jan. 29, 2004, Greenwire article: “State Regulators Say TXU May Be Too Dominant in Wholesale Market.”

Articles references from the *Fort Worth Star-Telegram* include “PUC: TXU may be too dominant” from Jan. 29, 2004; “Utility panel is looking at electricity price spikes” from Dec. 9, 2004; “Critics call overhaul plan impractical, costly, risky” from July 6, 2004; “Power-grid operator under fire” from July 20, 2004; “Regulators call for broader investigation of electric council” from June 10, 2004; “Texas power grid operator faces state investigations” from Dec. 1, 2004 and “Operator of State Power Grid Takes Heat” from Sept. 30, 2004.

This section also draws from the “Scope of Competition in Electric Markets in Texas, 2005,” published by the Texas Public Utility Commission. Note especially material included

in that report from pages 25, 26, 51, 52, 56 and 60. It also draws from “The Report to the 78th Texas Legislature, Scope of Competition in Electric Markets in Texas,” published by the Texas Public Utility Commission of Texas in January 2003.

YEAR: 2005

This section draws from various editions of the “Scope of Competition in Electric Markets in Texas,” published by the Texas Public Utility Commission for the Texas Legislature. See especially page 101 from the 2003 edition, page 70 from the 2005 edition and pages 58, 61, 67 and 78 from the 2007 edition. This section includes data collected from the United States Energy Information Administration . It includes rate case material collected from PUC Docket 35718. This section references the text of Senate Bill 5 and Senate Bill 20 adopted 2005.

Journalistic references include the June 10, 2005 edition of *The Texas Observer*; a June 1, 2005 article in the *Dallas Morning News*, “Legislature: Tallying the bills”; a May 24, 2005 article from the *Dallas Morning News* entitled “House OKs phone-line TV franchise bill”; and a July 28, 2005 article from Global Power Report, “Texas revives bill to introduce renewable portfolio standard.” This section also draws from the *Fort Worth Star-Telegram*, including: “Electricity up more in deregulated areas” from April 19, 2005; “TXU’s dominance cause for regulatory concern” from May 6, 2005; “Bill aims to deter monopoly-like control” from April 18, 2005; “Aid in electric fund set to shift” from May 23, 2005; “The taxing task of defining ‘tax’” from Sept. 9, 2003; “The cost of wind power generating controversy” from Sept. 17, 2007; “Texas power grid operators narrowly avoid rolling blackouts” from Feb. 27, 2008; “Suit claims meters have a number of issues” from May 7, 2007; “Rate boost to begin in days” from Oct. 29, 2005; and “Former executive pleads guilty,” Aug. 18, 2005.

YEAR: 2006

This section draws information from page 76 of the 2005 “Scope of Competition in Electric Markets in Texas” report, by the Texas Public Utility Commission, and page 74 of the agency’s “Scope of Competition” report from 2007. It also includes data from the European Wind Energy Association , specifically data found at <http://www.ewea.org/index.php?id=180>. This section includes data from the Electric Power Monthly reports for March 2006 and August 2006, produced by the United States Energy Information Administration. Also, Tom “Smitty” Smith, director of the Texas office of Public Citizen, provided information for this

section. He was interviewed on Jan. 2-3, 2009.

Journalistic sources for this section include “Heat forces power cuts across Texas,” *Austin American-Statesman*, April 18, 2006; “Former power firm exec pleads guilty,” the *Dallas Morning News*, March 25, 2006; “ERCOT chief resigns amid questions about his leadership style,” *The Associated Press*, May 16, 2006; “Reliant FERC Settle Over Energy Crisis,” *Associated Press*, Dec. 23, 2005; and an article in *Power Markets Week*, dated Oct. 30, 2006. Articles from the *Fort Worth Star-Telegram* include “PUC report citing savings of deregulation criticized,” Feb. 11, 2006; “Bills up 84 since end of regulation,” Nov. 8, 2005; “Study: Rates are out of line,” March 2, 2006; “Market rules haven’t paid off,” Dec. 1, 2006; “Study: Rates are up, not down,” March 20, 2006; “PUC rejects chief’s plan to trim rates,” Feb. 24, 2006; and “Officials criticize ERCOT’s conduct,” April 26, 2006.

YEAR: 2007

This section references “Unplugged, High Prices Under Texas Deregulation,” released in November 2008 by the Cities Aggregation Power Project. It also draws from page 6 of a “Market Operations Presentation” included in a Nov. 13, 2007, report to the ERCOT board of directors. That presentation can be found on the ERCOT .

This section draws largely from journalistic accounts, especially with regard to its description of the 2007 Texas Legislature. Articles include those that appeared on the *Associated Press* newswire on Feb. 23, 2007, and Feb. 26, 2007; a *San Antonio Express-News* article from May 26, 2007, entitled “Lawmakers work to spend taxes right, or get rid of them entirely”; and an exclusive report from , “What are the chances consumers will benefit from TXU’s sale?” That report appeared on June 24, 2007.

This section also draws from the following *Fort Worth Star-Telegram* articles: “A controversy brews as a milestone nears,” Dec. 24, 2006; “Suits claim manipulation,” April 18, 2007; “Report says TXU drove up prices,” March 13, 2006; “TXU faces record fine,” March 29, 2007; “Energy price hits \$1,500,” April 4, 2007; “Reliant Energy sister company agrees to pay penalty of \$111,581,” May 4, 2006; “TXU is winning battle at Capitol,” May 23, 2007; “Lawmakers file major utility legislation,” Feb. 7, 2007; “Power is an issue again,” Feb. 15, 2007; “TXU deal splits traditional allies,” March 1, 2007; “Debt is issue in sale of TXU,” Feb. 28, 2007; “Millions spent on lobbyists, legislators,” Aug. 22, 2007; “TXU sale may be held up by state,” March 16, 2007; “Utility legislation is ‘history,’” May 28, 2007, and “Consumers see mixed results,” May 29, 2007.

YEAR: 2008

This section draws from the “Scope of Competition in Electric Markets in Texas” for 2009 from the Texas Public Utility Commission. Specifically, it references data on pages 50, 55, 64 and 65. It also references 2007 and 2008 reports from Potomac Economics, the Delaware-based firm that acts as the Independent Market Monitor for ERCOT. This section draws information from a July 21, 2008, ERCOT press release, entitled: “Jerry Sullivan has left his position as executive director of the nodal program, CEO Bob Kahn announced today.” It also references a Nov. 30, 2004 report from Tabors Caramanis & Associates and KEMA Consulting entitled “Market Restructuring Cost-Benefit Analysis.” This section references a study “Should Texas Be Subsidizing Wind Energy Producers at the Expense of its School Children,” by University of North Texas economics professors Bernard L. Weinstein and Terry L. Clower. It was dated July 2008. It also references “Transmission Issues Associated with Renewable Energy in Texas,” dated March 28, 2005, which was produced as a joint effort between the Electric Reliability Council of Texas and ERCOT stakeholders.

The following news articles were used as source material: “Redesign for power grid moved back indefinitely; Delayed system expected to provide more information about congestion,” *Houston Chronicle*; May 21, 2008; “Power play over grid intensifies,” the *Dallas Morning News*, Dec. 18, 2004; “Overruns hit power overhaul,” *Fort Worth Star-Telegram*, Jan. 13, 2008; “Electric grid project over budget,” *Associated Press*, Nov. 27, 2008; “Texas power grid operators narrowly avoid rolling blackouts,” *Fort Worth Star-Telegram*, Feb. 27, 2008; “Price tag for new wind-power lines in billions,” *Fort Worth Star-Telegram*, April 3, 2008; “Wind might have a big impact on our wallets,” *Houston Chronicle*, July 20, 2008; “Texas is poised to pay big for wind power,” *Associated Press*, July 18, 2008; “Wind energy getting big boost from Pickens,” *San Antonio Express-News*, May 22, 2008; and “Feds Vow to Give States 24 Copters in Storm Season,” *Houston Chronicle*, April 27, 2006.

The subsection entitled “What is Nodal?” draws information from an article entitled “Electricity plan may add to Metroplex bills” that appeared on Oct. 19, 2003, in the *Fort Worth Star-Telegram*; an article entitled “Overruns hit power overhaul” that appeared in the same newspaper on Jan. 13, 2008; and the Public Utility Commission rule denoted by P.U.C. Subst. R. 25.501(m).

The subsection entitled “The GE Study” references the study entitled “Analysis of Wind Generation Impact on ERCOT

Ancillary Services Requirements,” GE Energy, March 28, 2008. It also draws from various news articles, including: “Pickens’ Planned 4,000-MW wind farm put on hold,” *Global Power Report*, Nov. 20, 2008; and “Renewables Still Energized: Prospects Seen Strong in Wind, Solar and Biofuels,” *Investment Dealers Digest*, Feb. 4, 2008.

The subsection entitled “Opt Out Aggregation” draws from Senate Bill 7 itself. It also references information from “Towns to test power in numbers,” *Fort Worth Star-Telegram*, Oct. 10, 2007; “Pilot Project Offers Insight into Impact of Electricity Deregulation,” *Energy Business Journal*, May 26, 2008; and an untitled article in the *Abilene Reporter-News*, dated May 10, 2008.

YEAR: 2009

This section draws from the “Scope of Competition in Electric Markets in Texas” for 2009, from the Texas Public Utility Commission. Specifically referenced are pages 37-38 and pages 70-83. Also referenced is a Nov. 6, 2007 report from Power in the Public Interest, an Olympia, Washington-based group. The report is entitled “Price Trends for Industrial Electricity, Deregulated vs. Regulated States.” This section cites pricing information gathered at the whitefence.com, and from the United States Energy Information Administration. This section references a December 2008 report from the Texas Coalition of Cities For Utility Issues that compares rates in competitive and non-competitive parts of Texas.

This section also draws from the Public Utility Commission rule denoted by P.U.C. Subst. R. 25.501(m), and “Market Restructuring Cost-Benefit Analysis” dated Nov. 30, 2004, by Tabors Caramanis & Associates. It cites initial comments submitted by the Steering Committee of Cities Served by Oncor relating to Consideration of Alternative Ratemaking Mechanism, in Docket 36358 at the PUC. Those comments were dated Jan. 6, 2009. It cites an April 17, 2008, judgment by the Court of Appeals for the Third District of Texas styled *CenterPoint Energy, et al. v. Gulf Coast Coalition of Cities, et al.*

It cites a Jan. 14, 2009 memorandum from PUC Chairman Barry Smitherman to Commissioners Kenneth W. Anderson, Jr. and Donna L. Nelson. The memorandum relates to “PUC Rulemaking Relating to Electric Provider Disclosures to Customers.” It cites a Jan. 13, 2009, letter from Public Utility Counsel Don Ballard to the three PUC commissioners pertaining to the same subject.

In addition, this section includes pricing information found on page 81 of “The Story of ERCOT,” a February 2011 report

by the Texas Coalition for Affordable Power. There’s also information from the United States Information Administration, found at <http://www.eia.doe.gov/cneaf/electricity/page/eia826.html>; and a Nov. 19, 2009 press release from ERCOT that describes an ERCOT board meeting.

The following news articles were used as source material: “Big bills blamed on spot bidding,” *Dallas Morning News*, May 6, 2009; “Most bills on renewable energy failed in Austin,” *Fort Worth Star-Telegram*, June 3, 2009; “Thompson Friend of the Underdog,” *Texas Tribune*, July 22, 2001; “ERCOT chief resigns, says it’s the ‘right time,’” *Dallas Morning News*, Sept. 16, 2009; “Texas Breaks Record for Electricity Demand,” *Dallas Morning News*, July 9, 2009; “Texas heat sends electricity demand to record high,” *Fort Worth Star-Telegram*, July 9, 2009; “Texans should rethink power ‘island’ status — FERC,” *Reuters*, May 6, 2009; and “Pickens paring down wind farm project,” *Dallas Morning News*, July 5, 2009.

YEAR: 2010

This section incorporates data taken from the United States Energy Information Administration, including information found at: http://www.eia.gov/cneaf/electricity/page/sales_revenue.xls and at: <http://www.eia.doe.gov/cneaf/electricity/page/eia826.html>

The following news articles were used as source material: “EFH debt downgraded after deal with lenders,” *Dallas Morning News*, Aug. 18, 2010; “Energy Future Holdings debt downgraded,” *Dallas Morning News*, Oct. 13, 2010; “Switch to nodal grid system could trouble Texas electric providers,” *Dallas Morning News*, September 30, 2010; “Texas regulator declares launch of nodal market ‘nothing short of miracle,’” *SNL Power Daily*, Dec. 3, 2010; and “Deregulation jolts Texas electric bills,” *Wall Street Journal*, June 17, 2008.

Also included in this section is material from “The Story of ERCOT,” released by TCAP in February 2011. Also included is information from the “Sunset Advisory Commission Staff Report on the Public Utility Commission, ERCOT and the Office of Public Utility Counsel,” published in April 2010; a Nov. 4, 2010 report to the ERCOT Technical Advisory Committee by Kenneth Ragsdale entitled “Nodal Issues & Defect Delivery Update;” information from page 24 of “The Report to the 82nd Texas Legislature, Scope of Competition of Electric Markets in Texas,” released in January 2011 by Texas Public Utility Commission; a report entitled “Market Restructuring Cost-Benefit Analysis — Final Report” from Nov. 30, 2004, by Tabors Caramanis & Associates; the Nov. 4, 2010 ERCOT Technical Advisory Committee Report entitled

"Prioritization Process Overview," by Troy Anderson; and the PUC Rulemaking to Address Initial Implementation of the Nodal Market (Order Adopting Amendments to P.U.C. Subst. R. 25.502 and 25.505). This last document is dated July 9, 2010 and can be found on the PUC, filed under Project No. 35392.

YEAR: 2011

¹ Based on an analysis of data from the United States Energy Information Administration

² From a review of the legislation, found at <http://www.capitol.state.tx.us/>

³ Based on a review of the legislation, found at <http://www.capitol.state.tx.us/>

⁴ Based on a review of legislative activities, found at <http://www.capitol.state.tx.us/>

⁵ Emily Ramshaw, "Thompson: Friend of the Underdog — and the Powerful," *The Texas Tribune*, July 22, 2010.

⁶ Emily Ramshaw, "Thompson: Friend of the Underdog — and the Powerful," *The Texas Tribune*, July 22, 2010.

⁷ 2007 Report to the 80th Texas Legislature, Scope of Competition in Electric Markets of Texas, Public Utility Commission of Texas, January 2007

⁸ "TXU Sibling Settles on Fine; \$15 million is a fraction of what was proposed," Tom Fowler, *Houston Chronicle*, Nov. 27, 2008

⁹ From a review of the legislation, found at <http://www.capitol.state.tx.us/>

¹⁰ Jim Forsyth, "Texas Launches Electric Power Deregulation," United Press International, June 1, 2001

¹¹ Jim Forsyth, "Texas Launches Electric Power Deregulation," United Press International, June 1, 2001

¹² Jim Forsyth, "Texas Launches Electric Power Deregulation," United Press International, June 1, 2001

¹³ 2011 Summer Reliability Assessment, North American Reliability Corporation, May 2011, page 27

¹⁴ Loren Steffy, "Electricity market failing at both ends,"

Houston Chronicle, February 11, 2011

¹⁵ ERCOT 2010 State of the Market Report, Potomac Economics, August 2011

¹⁶ See filings in the Public Utility Commission document interchange, Docket #37897, including Oct. 14, 2011 filing by Exelon Generation

¹⁷ Chris Brewster, Steering Committee of Cities Served by Oncor, PUC Comments, Oct. 14, 2011

¹⁸ "Supply Pinch in Texas tests Electricity Rules," Rebecca Smith, *Wall Street Journal*, Oct. 3, 2011

¹⁹ "TIEC Says "Compromise" Non-Spin Price Floors Would Have Raised Average Prices by \$50/MWh," *Energy Choice Matters*, October 17, 2011

²⁰ "PUC Sets Price for Power Reserves," Laylan Copelin, *Austin American-Statesman*, Oct. 28, 2011.

²¹ FERC/NERC Staff, "Report on the Outages and Curtailments During the Southwest Cold Weather Event of February 1-5, 2011," August 2011

²² "Blackout Plants Also Failed," Elizabeth Souder, S.C. Gwynne and Gary Jacobson, *Dallas Morning News*, Feb. 27, 2011

²³ "Blackout Plants Also Failed," Elizabeth Souder, S.C. Gwynne and Gary Jacobson, *Dallas Morning News*, Feb. 27, 2011

²⁴ FERC/NERC Staff, "Report on the Outages and Curtailments During the Southwest Cold Weather Event of February 1-5, 2011," August 2011

²⁵ 2011 ERCOT Blackout and Emergencies, Robert McCullough, July 15, 2011

²⁶ 2011 ERCOT Blackout and Emergencies, Robert McCullough, July 15, 2011

²⁷ Investigation of the ERCOT Energy Emergency Alert Level 3 of Feb. 2, 2011, Potomac Economics, LTD., April 21, 2011

²⁸ Protocol and Operating Guide Compliance Report For the Feb. 2, 2011, Energy Emergency Alert Level 3 Event, Texas Reliability Entity, Inc., May 13, 2011

²⁹ Report on Outages and Curtailments During the Southwest Cold Weather Event of Feb. 1-5, 2011, Federal Energy Regulatory Commission and the North American Electric Reliability Corporation, August 2011.

³⁰ Based on an analysis of data from the United States Energy Information Administration

³¹ Based on an analysis of data from the United States Energy Information Administration

³² "Dallas Resident Shocked to Receive \$1,200 Electric Bill," Tommy Noel, KDAF-TV, Sept. 20, 2011

³³ Whitefence.com, <http://whitefenceindex.com/service/Electricity>

³⁴ According to the PUC data, obtained under a Texas Freedom of Information request

³⁵ AEP Retail Electric Provider Texas Consumer Attitude Report, Nov. 2011, The Guide Group, Inc.

³⁶ "Houston electric bills will rise another \$2.20 per month in 2012," *Houston Chronicle Fuel Fix Blog*, Sept. 29, 2011, online at <http://fuelfix.com/blog/2011/09/29/houston-electric-bills-will-rise-another-2-20-per-month-in-2012/>

³⁷ "Special Interests Line Up to Spark Debate on Deregulation," Michael Davis, *Houston Chronicle*, Jan. 3, 1999

³⁸ "Deal helped TXU customers," *Fort Worth Star-Telegram*, June 27, 2004

YEAR: 2012

¹ Snapshot Report: Electricity Prices in Texas, Texas Coalition for Affordable Power, December 2013

² Snapshot Report: Electricity Prices in Texas, Texas Coalition for Affordable Power, December 2013

³ United States Energy Information Administration: http://www.eia.gov/cneaf/electricity/page/sales_revenue.xls

⁴ Testimony of Samuel Newell, Brattle Group Principal, Oct. 24, 2012 meeting of State House Committee on State Affairs, <http://www.house.state.tx.us/video-audio/committee-broadcasts/committee-archives/player/?session=82&committee=450&ram=12102410450>

⁵ Kate Galbraith, "Texas Struggles to Keep up with Power Demand," *Texas Tribune*, July 20, 2012, <http://www.texas-tribune.org/texas-energy/energy/texas-struggles-keep-power-demand/>

⁶ "Texas Launches Electric Power Deregulation," *United Press International*, June 1, 2001

⁷ Project No. 40000, "Commission Proceeding to Ensure Resource Adequacy in Texas," Public Utility Commission Interchange, www.puc.state.tx.us

⁸ "A Controversy Brews as a Milestone Nears; Irate Constituents are promoting lawmakers, even supporters of deregulation, to take another look at the law," *Fort Worth Star-Telegram*, Dec. 24, 2006

⁹ "Electricity: Peak demand likely to outpace supply," Simone Sebastian, *Houston Chronicle*, May 23, 2012

¹⁰ 2013 Scope of Competition in Electric Markets in Texas (DRAFT), page 4, Public Utility Commission.

¹¹ "Regulators Urged to Consider Prices," Recharge Ratepayer Report, May 16, 2012, <http://recharge.texas.com/uncategorized/lawmakers-electric-prices-should-matter-in-reliability-debate/>

¹² Public Utility Commission Interchange, Docket No. 40268, http://interchange.puc.state.tx.us/WebApp/Interchange/Documents/40268_9_725044.PDF

¹³ Public Utility Commission Interchange, Docket No. 37897, http://interchange.puc.state.tx.us/WebApp/Interchange/Documents/37897_149_727044.PDF

¹⁴ "Electricity Company Passing Costs Onto Customers," Jim Fuquay, *Fort Worth Star-Telegram*, Oct. 25, 2012, <http://www.star-telegram.com/2012/10/25/4364803/electricity-provider-passing-on.html>

¹⁵ Elizabeth Souder, "Is the governor of Texas going to bail out Energy Future Holdings," *Dallas Morning News*, Oct. 9, 2012, <http://bizbeatblog.dallasnews.com/2012/10/is-the-governor-of-texas-going-to-bail-out-energy-future-holdings.html/>

¹⁶ "Regulators Double Cap for Electricity Prices," Kate Galbraith, *Texas Tribune*, Oct. 25, 2012, <http://www.texas-tribune.org/texas-energy/energy/texas-regulators-act-texas-electricity-prices/>

¹⁷"Texas Blackout Avoidance Measures Could Cost Billions," Kate Galbraith, *Texas Tribune*, June 21, 2012, <http://www.texastribune.org/texas-energy/energy/texas-blackout-avoidance-measures-could-cost-billi/>

¹⁸http://interchange.puc.state.tx.us/WebApp/Interchange/Documents/40268_43_728656.PDF

¹⁹Chris Brewster, "ERCOT Publishes Much Anticipated Report on Effectiveness of Wholesale Market In Attracting Generation Investment," ERCOT Monitoring Report, May 2012

²⁰Testimony to the House Committee on State Affairs, Oct. 24, 2012, <http://www.house.state.tx.us/video-audio/committee-broadcasts/committee-archives/player/?session=82&committee=450&ram=12102410450>

²¹"Texas Industrials Eviscerate Brattle Resource Adequacy Analysis," *Energy Choice Matters*, Oct. 24, 2012, <http://www.energychoicematters.com/stories/20121024b.html>

²²Polly Ross Hughes, *Texas Energy Report*, July 27, 2011

²³"ERCOT Investment Incentives and Resource Adequacy," The Brattle Group, June 2, 2012

²⁴"Some Good News for the Texas Grid: We've Got a Few More Years before Things Get Dicey," Terrence Henry, *State Impact Texas*, Oct. 23, 2012, <http://stateimpact.npr.org/texas/2012/10/23/some-good-news-for-the-texas-grid-weve-got-a-few-more-years-until-things-get-dicey/>

²⁵"ERCOT Updated Report on Reserve Margin Analysis," Oct. 22, 2012, Public Utility Commission Interchange, Project No. 40000, Item No 319.

²⁶"ERCOT Reserve Margin Target Projected At or Above Target through 2017," *Energy Choice Matters*, Oct. 24, 2012, <http://www.energychoicematters.com/stories/20121024a.html>

²⁷Resource Adequacy in ERCOT, Powerpoint presentation by Public Utility Commissioner Kenneth Anderson, Winter 2012

²⁸Text of HB 2133, <http://www.capitol.state.tx.us/tlodocs/82R/billtext/doc/HB02133F.doc>

²⁹"Worst of Both Worlds for Electricity Users," Loren Steffy, *Houston Chronicle*, July 26, 2012, <http://www.chron.com/business/steffy/article/Steffy-Worst-of-both-worlds-for-electricity-3739015.php>

³⁰"Request for Approval of a Public Utility Commission Voluntary Mitigation Plan for NRG Companies," Public Utility Commission Final Order, July 13, 2012, Public Utility Commission Interchange, Control Number 40488, Item 11

³¹"The Economics of Resource Adequacy Planning: Why Reserve Margins Are Not Just About Keeping the Lights On," Kevin Carden, Nick Wintermantel and Johannes Pfeifferberger, *NRRI Report*, April 2011.

³²Testimony to the House Committee on State Affairs, Oct. 25, 2012, <http://www.house.state.tx.us/video-audio/committee-broadcasts/committee-archives/player/?session=82&committee=450&ram=12102410450>

YEAR: 2013

¹"Snapshot: Oncor Collecting Hundreds of Millions in Phantom Taxes," Texas Coalition for Affordable Power, online at <http://tcaptx.com/report/tcap-snapshot-report-oncor-collecting-hundreds-of-millions-of-dollars-in-phantom-taxes>

²"Special Interests Paid Lobbyists Up To \$328 Million in 2013 Session," Texans for Public Justice, Online at <http://info.tpj.org/reports/Top%20Lobbyists%202013.pdf>

³"Low-income Texans catch a break on electric bills," Dave Lieber, *Dallas Morning News*, July 28, 2013

⁴"Low-income Texans catch a break on electric bills," Dave Lieber, *Dallas Morning News*, July 28, 2013

⁵"Low-income Texans catch a break on electric bills," Dave Lieber, *Dallas Morning News*, July 28, 2013

⁶"Utilities: Poor Texans are in Line for Big Cut in Electricity Bill," Allan Turner, *Houston Chronicle*, July 26, 2013

⁷"Electric Choice Website Gets a Makeover," Jonathon Coker, Recharge Texas website, Aug. 1, 2013

⁸"Perry names utility Commissioner," Laylan Copelin, *Austin American-Statesman*, August 22, 2013

⁹"Perry names utility Commissioner," Laylan Copelin, *Austin American-Statesman*, August 22, 2013

¹⁰"PUC sides with power industry on reserve margins," James Osborne, *Dallas Morning News*, October 25, 2013

¹¹"PUC sides with power industry on reserve margins,"

James Osborne, *Dallas Morning News*, October 25, 2013

¹²"REGULATION; State calls for reserve power; Critics say requirement will drive up monthly consumer electric bills," Emily Pickrell, *Houston Chronicle*, October 26, 2013

¹³"A Retreat from Electric Competition: How a Texas Capacity Market Will Lead to Expensive Subsidies, New Regulations and Higher Prices" Texas Coalition for Affordable Power, November 2013

¹⁴"Wendy Davis says no on power market overhaul," James Osborne, *Dallas Morning News*, Dec. 13, 2013

¹⁵"Texas regulators warned against power capacity market without legislator support," Christine Cordner, *SNL Electric Utility Report*, December 2, 2013

¹⁶"Presentation made at the Gulf Coast Power Association Fall Conference," Julia Frayer, London Economics International, 2013

¹⁷"Letter to ERCOT Board from Troy Fraser, Chairman Senate Natural Resources Committee, July 15, 2013

¹⁸"Regulator: Capacity Payments are 'Corporate Welfare,'" Margaret Somereve, TCAP website at <http://tcaptx.com/policy-and-reform/regulator-capacity-payments-are-corporate-welfare>, Sept. 6, 2013

¹⁹"PUC rejects power outage prediction," James Osborne, *Dallas Morning News*, Dec. 9, 2013

²⁰"Time for Texas to add to state's electric grid," John Ragan, *Houston Chronicle*, June 11, 2013

²¹"NRG CEO Admits Merchant Build 'Nearly Impossible' in Any Market, Including Capacity Markets," Paul Ring, *Energy Choice Matters*, Aug. 9, 2013

²²"Competitive Suppliers: Outlook for Dire Resource Adequacy Consequences in Texas 'Wholly Overstated,'" Paul Ring, *Energy Choice Matters*, Aug. 20, 2013

²³According to RESA website, <http://www.resausa.org/members>

²⁴"Luminant will pay \$750,000 to settle PUC charges," Jim Fuquay, *Fort Worth Star-Telegram*, Nov. 27, 2013

²⁵"Energy Future Holdings Posts First Profit in 3 Years," James

Osborne, *Dallas Morning News*, Nov. 1, 2013

²⁶"Energy Future Holdings Reports \$3.36 billion loss," Jim Fuquay, *Fort Worth Star-Telegram*, Feb. 20, 2013

²⁷"Electricity Prices in Texas," Texas Coalition for Affordable Power, December 2013

APPENDIX A

Information in this appendix is based on a reading of Senate Bill 7 itself found here.

APPENDIX B

This analysis found in this section is based on a review of electricity-related complaints received by the PUC for the 1998 through 2013 fiscal years. The PUC did not collect this data before 1998 and also reports that it discarded pre-2003 data under its documentation retention policy. As a consequence, estimates for complaints from 1998 through 2003 were obtained through journalistic accounts: a Dec. 14, 2002 article in the *Fort Worth Star-Telegram* entitled "Complaints from power customers pile up," and a Nov. 13, 2002 article in the *Dallas Morning News* entitled "Billing errors are down, but consumer complaints are up." It also includes data culled from page 106 of the 2003 *Scope of Competition Report*, produced by the PUC. Other data was obtained directly from the PUC, through a Freedom of Information request.

APPENDIX C

This appendix gathers information from three articles: "CenterPoint Takes surprise charge; write-down to prepare for PUC ruling creates loss," *Houston Chronicle*, Nov. 10, 2004; "AEP plan would raise electric bills by almost \$5," *Victoria Advocate*, March 5, 2006; and "Deregulation Helps buyout firms, if not the ratepayers," *Houston Chronicle*, Oct. 5, 2005. This appendix also references an April 3rd, 2012 article on the *Recharge Ratepayer Report* found online at <http://recharge-texas.com/your-electricity-contract-a-mulligan-stew-of-fees-and-special-charges/>.

APPENDIX D

Appendix D draws information from a review of Senate Bill 7, as well as information from a survey on consumer attitudes conducted by The Guild Group, for AEP Retail Electric. The Guild Group report was dated November 2011.

APPENDIX E

This appendix includes information gathered from the ERCOT and from a reading of Senate Bill 7. It also includes information from an ERCOT spreadsheet, included in a Dec. 8, 2011 email from ERCOT's public information officer to the author of this report. This section references a June 26, 2012 press release from ERCOT, entitled "ERCOT board approves pilot for new demand response option, budget for 2013."

APPENDIX F

Appendix F draws from several academic reports, including the "2010 Wind Technologies Market Report," by Ryan Wiser and Mark Bolinger, of the Lawrence Berkeley National Laboratory; "The Energy Report (2008)," by the Texas Comptroller of Public Accounts, published on May 6, 2008; "The Costs and Impacts of Intermittency," by R. Gross, et al., of the Imperial College in London, published in March 2006; "Why Wind Power Does Not Deliver the Expected Emissions Reductions," by Herbert Inhaber for the 2011 edition of *Renewable and Sustainable Energy Review*; "Wind Generation, Power System Operation and Emissions Reduction," by Eleanor Denny and Mark O'Malley, for the February, 2006 edition *IEEE Transactions on Power Systems* (Vol. 21, No. 1); "The Economics of Large-Scale Wind Power in a Carbon Constrained World," by Joseph F. DeCarolus and David W. Keith, for *Energy Policy* 34 (2006); "Successful Renewable Energy Development in a Competitive Electricity Market: A Texas Case Study," by Jay Zarnikau, for *Energy Policy* 39 (2011) and information drawn from page 22 of the "Wind Energy Update," by Larry Flowers of the National Renewable Energy Laboratory. That report is dated Jan. 23, 2008.

Appendix F also draws from presentations given by leading energy experts, including "Wind and Energy Markets: A Case Study of Texas," presented by Ross Baldick for the April 29, 2009 National Academy of Engineering Regional Meeting in College Station, Texas. Appendix F also draws from a Dec. 15, 2004 presentation by Ed Feo to the Renewable Energy Resources Committee of the American Bar Association; and information from Chicago-based utility analyst Travis Miller, which can be found online at: <http://www.hellenicshippingnews.com/News.aspx?ElementId=f021ac64-4fd8-4fb6-9ce0-d063782f47d0>.

Other reports, including those from official sources, include "CREZ Progress Report No. 4 (July Update)," prepared for

the Public Utility Commission of Texas, July 2011; ERCOT'S "CREZ Transmission Optimization Study," April 2, 2008; "The Report to the 82nd Texas Legislature, Scope of Competition in Electric Markets in Texas," prepared by the Public Utility Commission of Texas, January 2011; the "Texas Renewables Implementation Plan: Quarterly Update for the 3-Month Period ending March 31, 2010," for the ERCOT Renewable Technologies Working Group of the ERCOT Technical Advisory Committee, April 2010; "Economic Benefits, Carbon Dioxide Emissions Reductions, and Water Conservation Benefits from 1,000 Megawatts of New Wind Power in Indiana," produced for the U.S. Department of Energy by the National Renewable Energy Laboratory and information from the United States Energy Information Administration.

Appendix F draws from the following press reports: "Texas Wind Energy Fails, Again," Robert Bryce, *National Review*, April 29, 2011; "The Economics of Wind II: Subsidies — the Why and How Much," Kathryn Skelton, *The Sun Journal* (Lewiston, Maine), April 12, 2010; "Energy Industry Fears U.S. Tax Credit Won't Be Renewed," Dan Voorhis, *McClatchy Newspapers*, April 5, 2012; "Americans Gaining Energy Independence," *Hellenic Shipping News Worldwide*, Feb. 11, 2012 and "Negative Power Prices in ERCOT West: 2009 and 2010 Through September," Michael Giberson, Nov. 11, 2010, *The Energy Collective*.

This Appendix included information from a May 31, 2011 press release by ERCOT, entitled "ERCOT Expects Adequate Power Supplies for Summer (Update)," and wind industry statistics from the American Wind Energy Association, a trade group.

Appendix F originally appeared as a stand-alone report, which was released by the Texas Coalition for Affordable Power in August 2012. The online version of the report — and more detailed sourcing information — can be found online at <http://texaswindenergy.tcaptx.com/>.

About the Author

Policy analyst R.A. “Jake” Dyer has spent more than a decade monitoring consumer issues in Texas, its energy markets and ERCOT. His long journalism career included nearly a decade with the *Fort Worth Star-Telegram*, where he was named reporter of the year in 2007, and nearly a decade with the *Houston Chronicle*, where he was nominated for a Pulitzer Prize.

In 2010 Dyer authored *Natural Gas Consumers and the Texas Railroad Commission*, a report on pocketbook and policy issues. In 2011 he authored *The Story of ERCOT*, a special report on the Texas grid operator, power market and prices. His work with the Texas Coalition for Affordable Power and its predecessor organizations began in 2008.



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