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BEFORE THE ARIZONA CORPORATI

Arizona Corporation Commission

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AZ CORP COMMISSION  
DOCKET CONTROL

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IN THE MATTER OF THE COMMISSION'S  
INQUIRY INTO RETAIL ELECTRIC  
COMPETITION.

DOCKET NO. E-00000W-13-0135

ARIZONA MUNICIPAL POWER USERS'  
ASSOCIATION'S COMMENTS AND REPLY

The Arizona Municipal Power Users' Association, an Arizona non-profit information corporation consisting of the electric departments of cities, towns, special districts and cooperatives, hereinafter submits its responses in the above Docket on the issue of retail competition and deregulation in the State of Arizona now pending before the Commission.

1. Residential customers in retail competition jurisdictions pay more:

In an uncontroverted study commissioned by the non-jurisdictional American Public Power Association dated April of 2013, the study examined the residential price impact history of retail competition in states which were regulating and not regulating retail competition. The conclusion of that study which has been not controverted by any filings before this Commission, concluded ratepayers in states with retail competition pay three cents (\$0.03) more per kilowatt-hour.

Conclusion:

In an economic depression it is illogical for this Commission to launch the State of Arizona into retail competition and deregulation of the electric utility industry and expose in a "trial balloon" Arizona residential customers to a probability of accelerated increased rates. The approximately two thousand (2,000) municipal electric entity members of the American Public Power

1 Association are predominately and primarily concerned with delivering low-cost electricity to their  
2 citizen taxpayer and residential customers. The study by that group shows retail competition cost  
3 ratepayers more than regulation.

4 2. Texas is a disaster waiting to happen:

5 Data and information from Texas indicate that deregulation has critically  
6 jeopardized reliability of its electric grid. No one in Texas wants to invest in the generation required  
7 to provide Texas with a reliable system. Consequently, the Texas electric system reserves which are  
8 essential to the operation of a reliable electric system are not being created or maintained. Texas is  
9 an energy based deregulated state without any regard to a capacity investment incentive. Witness its  
10 historic blackout. Witness the correspondence from NREC to the ERCOT advising Texas that it is in  
11 a perilous state concerning electric system reliability.

12 Conclusion:

13 Why would the Arizona Corporation Commission want to gamble and put into  
14 jeopardy what is today a vibrant and healthy and reliable Arizona electric utility system that delivers  
15 affordable electricity. In Vegas such an action at the "craps" table is commonly called "shooting  
16 eight the hard way." A ridiculous, risky and almost impossible bet with customer money.

17 3. No other Rocky Mountain state has ventured into deregulation:

18 The proponents of retail competition and deregulation would like the State of  
19 Arizona to be pushed into being the leading regional deregulated electric utility state and to be the  
20 first in the Rocky Mountain west to "experiment" with retail competition. To date there is no retail  
21 competition success story in any state similar in circumstance to Arizona. There is no current  
22 example that yet proves deregulation and retail competition works for the residential customers.  
23  
24  
25

1                   4.     Creation of a regional transmission organization or an independent scheduling  
2 organization will only add unneeded cost and will divest the Commission and the state of essential  
3 utility jurisdiction:

4                   In order to implement deregulation and retail competition, there will have to be  
5 utility asset divestiture and probably the creation of a Regional Transmission Organization (RTO) or  
6 an Independent Scheduling Operator (ISO) which would be multi-state. It is without question that in  
7 every state where this type of organization has been created, residential prices of electricity have  
8 increased to the consumer and a bureaucratic overhead in the hundreds of millions of dollars has been  
9 created for governance. Also, according to recent Federal Energy Regulatory Commission rulings  
10 (FERC), the peculiarities and the unique generation supply and transmission situations that are  
11 required within a state and are of state concern are to be disregarded in the operation of an RTO and  
12 an ISO. This loss of state sovereignty in making decisions on utility supply and transmission and  
13 generation investments and the pricing of electricity to residential customers is tragic and to be  
14 avoided. Deregulation and retail competition today is risky, unwise, and not justified under current  
15 conditions of stable electric pricing for consumers in the State of Arizona and the existence of  
16 demonstrated electric system reliability by the Arizona electric utilities, including reserves and  
17 adequate transmission.

19                   5.     Non-Jurisdictional municipalities will be adversely impacted, as will their  
20 customers:

21                   Because of the complex wholesale power and transmission contractual  
22 relationships among non-jurisdictional entities in the State of Arizona with regulated Arizona utility  
23 public service corporations, the cascading and catastrophic cost increases resulting from the  
24 imposition of an RTO or an ISO, the loss of reserves and system reliability, and the failure to find  
25

1 new generation investment will all work ultimately to the adverse economic circumstances of non-  
2 jurisdictional municipal entities in the State of Arizona.

3 6. Look who is asking for deregulation and retail competition:

4 The proposal is, as they say in the movies, "all about the 'Benjamins'." It is  
5 about the money. It is not about bringing lower cost to residential consumers, but about bringing  
6 opportunistic lower cost to the mines, major industries and national conglomerate business  
7 organizations, such as the Wal-Marts and the Costcos.

8 Conclusion:

9 Why should the Arizona Corporation Commission make Arizona the first state  
10 in the Rocky Mountain region to introduce retail competition and deregulation when it has not been  
11 adequately proven to be a success nationwide for residential customers? In a presentation by the  
12 "Merchant" Constellation Energy at the Tempe Buttes Hotel about two years ago, the Constellation  
13 representative admitted in Arizona for competition there would be a necessity for distribution rate  
14 cases across the entire spectrum of electric utilities in the State of Arizona in order to accomplish the  
15 following:  
16

- 17 (a) First, fully allocate the distribution infrastructure cost of each  
18 distribution utility (something which raises customer electric rates and is such  
19 a drastic event the Arizona Corporation Commission and its Staff have  
20 hesitated and been reluctant in the past to implement);  
21 (b) Second, take into account divestiture of generation and introduction of  
22 RTO/ISO operations and turn over transmission to FERC;  
23 (c) Third, abdicate Arizona Corporation Commission responsibility for  
24 Arizona electric system reliability to NERC and FERC. Issues of new  
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generation need and pricing, and need and pricing of transmission and electricity will not be subject to state control, but will be a matter of federal and regional control.

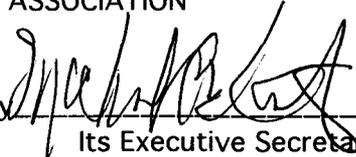
If retail competition and electric deregulation achieving lower residential rates and improved electric system reliability is to eventually occur in Arizona, let it be first clearly and completely and honestly demonstrated to have been successfully implemented in other jurisdictions before the State of Arizona embarks on a path and a "bet" ("eight the hard way") that puts at risk some of the main ingredients of public health safety and welfare, lessened reliability and increased costs to the residential consumer.

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RESPECTFULLY SUBMITTED this 15 day of August, 2013.

ARIZONA MUNICIPAL POWER USERS'  
ASSOCIATION

BY   
Its Executive Secretary

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2 I hereby certify that on this 15 day of August, 2013, I caused the foregoing  
3 document to be served on the Arizona Corporation Commission by delivering the original and thirteen  
4 (13) copies of the above to:

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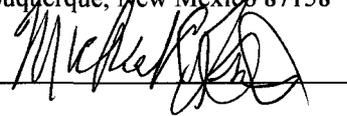
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# **Retail Electric Rates in Deregulated and Regulated States: 2012 Update**

**Published April 2013**



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Washington, D.C. 20009-5715  
202/467-2900**

**[www.publicpower.org](http://www.publicpower.org)**

## **Retail Electric Rates in Deregulated and Regulated States: 2012 Update**

The U.S. Department of Energy, Energy Information Administration (EIA) data show that between 1997 and 2012, increases in retail electric prices were higher in states with deregulated electric markets than in regulated states. EIA has just published full-year 2012 data, allowing a 15-year comparison between deregulated and regulated states.

The deregulated category includes states with retail choice programs, and whose rates are strongly influenced by wholesale power prices in markets under the jurisdiction of the Federal Energy Regulatory Commission (FERC). These states allow end-use customers to choose their electricity provider (retail choice) and no longer have rate caps or other forms of regulatory protections that limit customers' exposure to wholesale market prices. Deregulated states are California, Connecticut, the District of Columbia, Delaware, Illinois, Massachusetts, Maryland, Maine, Michigan, Montana, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, and Rhode Island.

The regulated category includes those states with traditional rate regulation. Ohio has been added to the list of deregulated states as its transitional rate regulation has come to an end.

Average retail rates for each category were calculated by dividing total annual revenue from sales to consumers by total annual sales to consumers.

In most deregulated states, IOUs sold off their electric generating facilities as part of the implementation of the retail choice regime. Over the past few years, the percentage of customers purchasing from an alternative supplier has increased and currently ranges from about 15 to 45 percent in most retail choice states. The distribution utility purchases power from the wholesale market to serve the remaining customers not purchasing from an alternative supplier. (This is generally called default or provider-of-last-resort service). With the exception of part of Montana, all of these states are located in regions where wholesale electricity prices are set through centralized wholesale markets run by regional transmission organizations (RTOs) and Independent System Operators (ISOs).

The following chart and graph cover fifteen years of experience with retail choice programs. 1997 was chosen as the starting year as it represents the last year with essentially no retail choice activity. The decline in rates in deregulated states in 1998 and 1999 most likely reflects the effect of mandated rate decreases in retail choice states, but the decline was short-lived as rates began rising again in 2000.

Rates for both deregulated and regulated states increased steadily for the first half of the previous decade, then increased dramatically in deregulated states between 2005 and 2006 as more rate caps came off and natural gas prices increased. Rates in regulated states also increased, though at a slightly slower pace. The decline in natural gas prices has kept rates in deregulated states relatively flat from 2008-2012. Rates in regulated

states increased slightly by 0.6 cents during this period, but are still 25 percent below rates in deregulated states.

States that implemented retail choice electric plans were generally high cost states, and the hope was that competition by electric suppliers would result in lower rates. In 1997, the states in the deregulated category had average rates that were 2.8 cents per kWh above rates in the regulated states (8.6 vs. 5.8). Unfortunately, the retail choice experience – complete with the combined effect of divestiture of utility generating assets, and exposure of retail consumers to wholesale rates set in RTO markets – has resulted in an even larger gap in 2012, with deregulated states paying, on average, rates that are 3.0 cents per kWh above rates in regulated states (11.9 vs. 8.9).

**Average Revenue per Kilowatt-hour: Deregulated vs. Regulated States**

Source: Energy Information Administration, Forms EIA-861 and EIA-826.

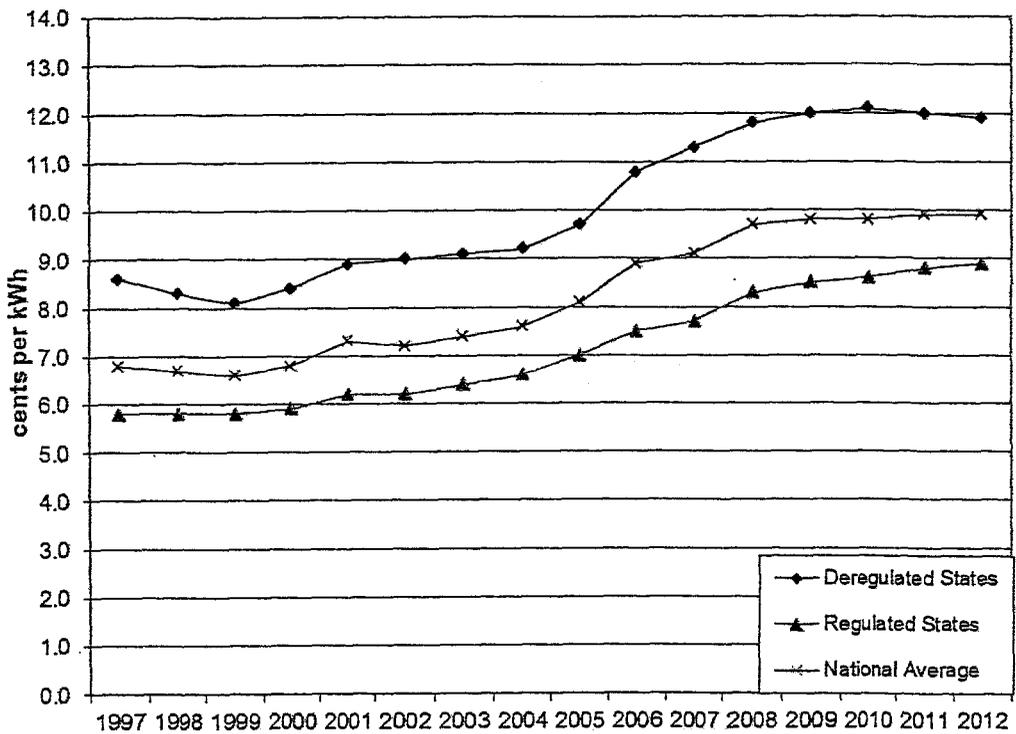
	<u>Deregulated States</u> (in cents per kilowatt-hour)	<u>Regulated States</u>	<u>National</u>
1997	8.6	5.8	6.8
1998	8.3	5.8	6.7
1999	8.1	5.8	6.6
2000	8.4	5.9	6.8
2001	8.9	6.2	7.3
2002	9.0	6.2	7.2
2003	9.1	6.4	7.4
2004	9.2	6.6	7.6
2005	9.7	7.0	8.1
2006	10.8	7.5	8.9
2007	11.3	7.7	9.1
2008	11.8	8.3	9.7
2009	12.0	8.5	9.8
2010	12.1	8.6	9.8
2011	12.0	8.8	9.9
2012	11.9	8.9	9.9
 <u>Difference, in cents per kilowatt-hour</u>			
1997-2012	3.3	3.1	3.1

Notes: Deregulated states include: CA,CT,DC,DE,IL,MA,MD,ME,MI,MT,NH,NJ,NY,OH,PA,RI

Regulated states include all other states except for Texas.

Texas is included in the National average.

Average Rates: Deregulated vs. Regulated States

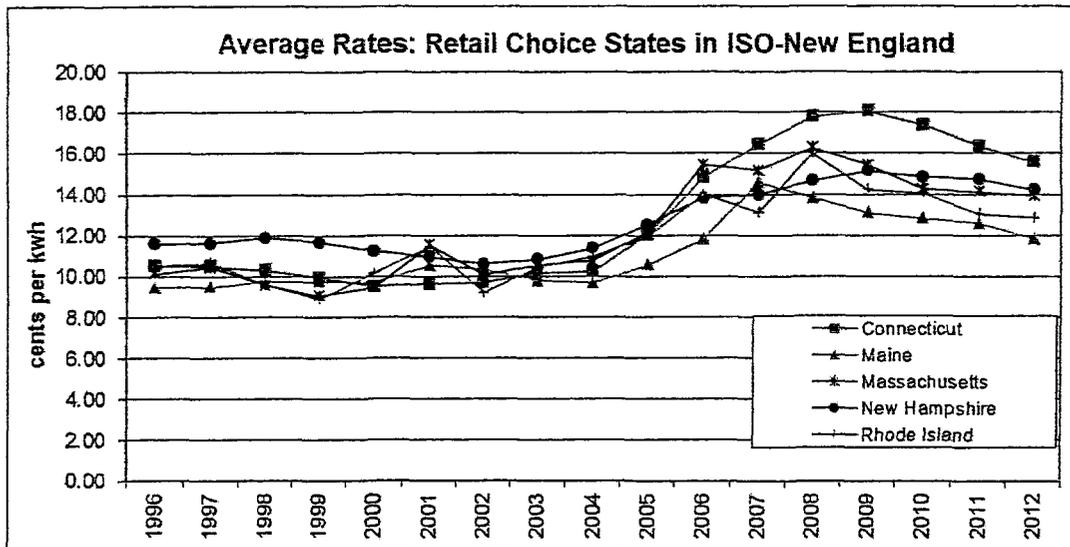


Data for Individual States

Five of the 15 states in the deregulated category are located in the footprint of the New England RTO (known as ISO-New England). The table below shows that rates for all five states were already well above the national average in 1997. Over the 15-year period, both Connecticut and Massachusetts experienced rate increases significantly above the national average. The graph shows that rates in these New England states have declined over the last three to four years. This is most likely a result of steep drops in natural gas prices, as the New England region relies heavily on natural gas for generation.

**State Average Customer Rates, in cents per kWh**

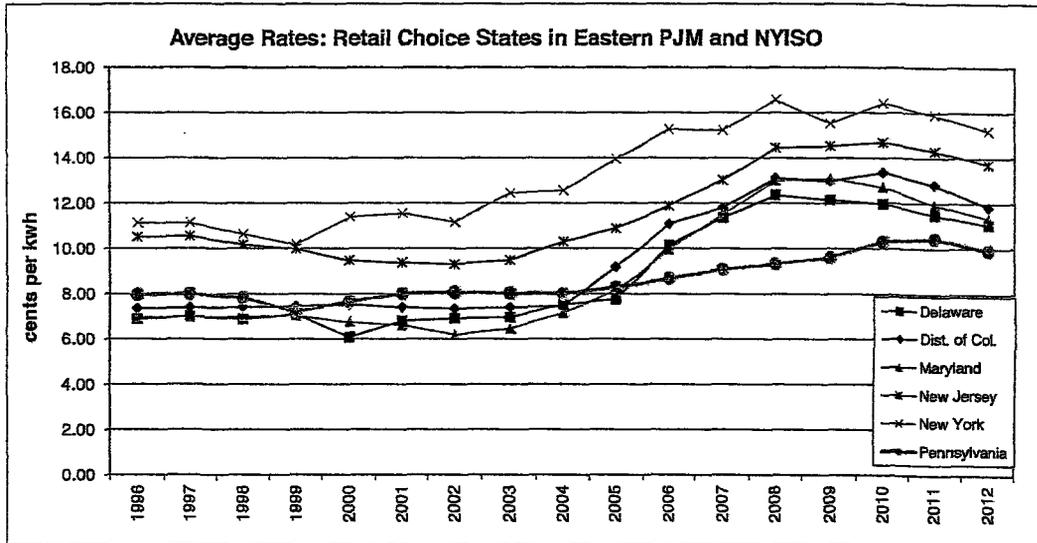
	<u>1997</u>	<u>2012</u>	<u>Difference</u>
<u>ISO - New England</u>			
Connecticut	10.5	15.6	5.1
Maine	9.5	11.8	2.3
Massachusetts	10.4	13.9	3.5
New Hampshire	11.6	14.2	2.6
Rhode Island	10.7	12.9	2.2
National Average	6.8	9.9	3.1



Four retail choice states and the District of Columbia are in the PJM RTO, and the state of New York comprises the New York RTO (known as NYISO). The table below shows that retail rates in all jurisdictions except Pennsylvania increased more than the national average between 1997 and 2012. Most Pennsylvania customers were still subject to rate caps until 2011. Rates for this state increased slightly as the rate caps came off in 2010 and 2011.

**State Average Customer Rates, in cents per kWh**

	1997	2012	Difference
<u>Eastern PJM and NYISO</u>			
Delaware	7.0	11.1	4.1
District of Columbia	7.4	11.8	4.4
Maryland	7.0	11.3	4.3
New Jersey	10.5	13.7	3.2
Pennsylvania	8.0	9.9	1.9
New York	11.1	15.2	4.1
National Average	6.8	9.9	3.1



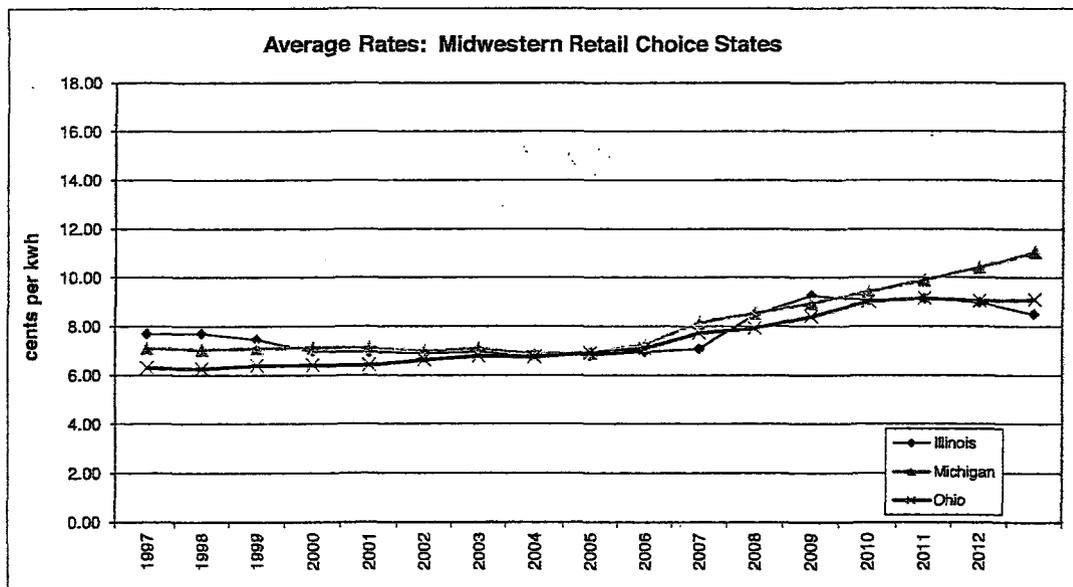
Utilities in the three retail choice states in the Midwest operate in both PJM and the Midwest ISO (MISO). Commonwealth Edison, which serves over 60 percent of the load in Illinois, is in PJM, while the rest of the Illinois utilities, almost all of Michigan, and the northern half of Ohio are in MISO. Rates in Illinois were subject to a rate cap through 2006. The state used an auction process to establish the 2007 rate, and because the results were so high, subsequently negotiated a refund settlement with the largest utilities. The settlement was authorized by a 2007 law that also established the Illinois Power Authority to procure power for the state's IOUs.

Unlike IOUs in most retail choice states, Michigan utilities did not sell their generating assets, and as a consequence, only depend on wholesale power markets for a portion of their customers' power needs. Under the terms of a 2008 law, participation in retail choice programs is capped at ten percent of an IOU's retail sales.

Until recently, Ohio utilities had been subject to transition rate regulation. IOUs were required to offer customers a rate approved by the Public Utilities Commission of Ohio (PUCO) under a cost-plus-based electricity plan. Beginning in 2012 a large share of IOU load was bid at competitive auctions, and a majority of customers had switched to alternative suppliers. Because a large portion of Ohio ratepayers are now directly exposed to wholesale market prices, as of 2012 Ohio is considered a deregulated state.

**State Average Customer Rates, in cents per kWh**

	<u>1997</u>	<u>2012</u>	<u>Difference</u>
<u>Midwest</u>			
Illinois	7.7	8.5	0.8
Michigan	7.0	11.0	4.0
Ohio	6.3	9.1	2.8
National Average	6.8	9.9	3.1



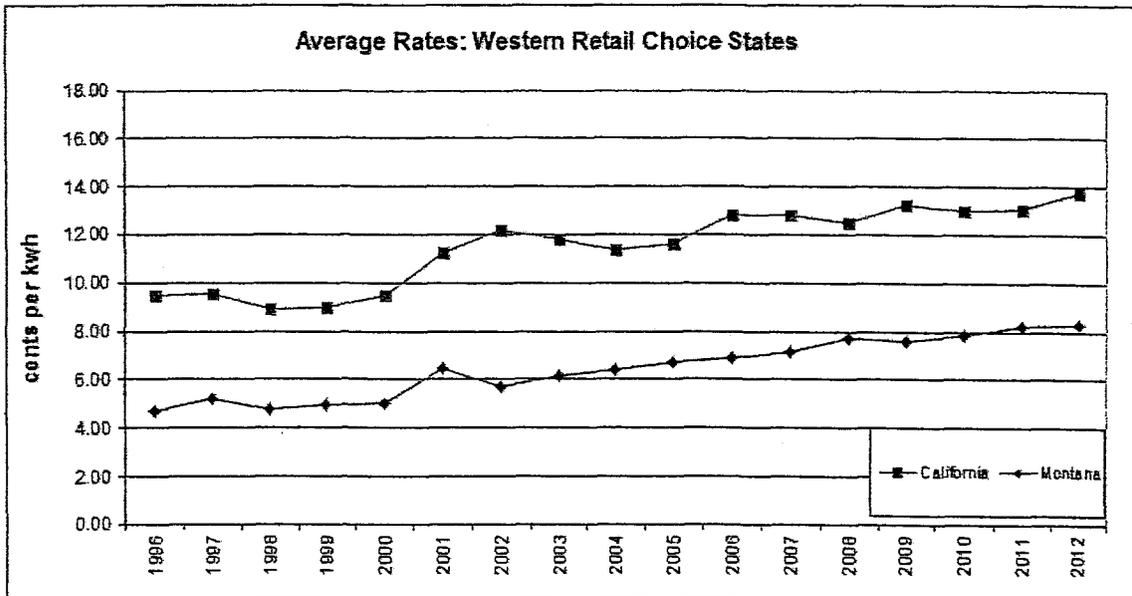
Only two western states implemented retail choice: California, which comprises the California ISO, and Montana. Both states currently have very limited retail choice programs. Average rates in California have increased more than the national average, while rates in Montana have increased exactly at the national average.

Following the California energy crisis in 2000-2001, retail choice was suspended in California, and the only customers that could choose their providers were those who were on retail choice plans at the time of the suspension. An October 2009 law allowed retail choice for commercial and industrial customers up to the level achieved prior to the suspension of retail choice, and in April 2010, the state Public Utilities Commission set the level at 11 percent of total retail sales.

Montana is the only retail choice state not entirely in an RTO, but the state's IOU sold off all of its generation, so the utility must purchase power in wholesale power markets, including RTO-operated markets. Montana enacted a law in 2007 to end retail choice for all but large customers with more than 5 megawatts of load and those customers on retail choice plans as of October 2007.

**State Average Customer Rates, in cents per kWh**

	1997	2012	Difference
<u>Western States</u>			
California	9.5	13.8	4.3
Montana	5.2	8.3	3.1
National Average	6.8	9.9	3.1



# Challenges Facing Power Generators in ERCOT

Although nearly all energy experts agree that demand for electric energy in Texas will outstrip supply in the coming years, developers of new power generation facilities are facing significant headwinds. The cause of the problems is a unique mix of circumstances.

By Stuart Zisman and Katherine Milton, Bracewell & Giuliani LLP

The competitive energy markets managed by the Electric Reliability Council of Texas (ERCOT) have been hailed by some as the best in the country for allowing the “free hand” of the wholesale generation market alone to send the appropriate pricing signals for new power plant construction. The following factors, however, pose challenges to ERCOT’s future energy supply:

- An unwillingness on the part of suppliers to enter into long-term power purchase agreements.
- A related lack of liquidity in the term energy markets.
- A general reluctance on the part of lenders to provide financing for “merchant” projects.
- Regulatory changes affecting both existing generators and developers of new power plants.
- The absence of a capacity market.

Because the time needed to develop and complete an electric generating facility can exceed three years, Texans may face serious power shortages if some of these issues aren’t resolved in the near term.

Demand for electricity in ERCOT is rapidly approaching the level of existing supply. ERCOT has a target reserve margin (the percentage of available resources above peak demand) of 13.75%. Maintaining that reserve margin is critical to ensuring stability of supply and avoiding blackouts and brownouts. However, in each reporting year after 2014, ERCOT currently projects the reserve margin to fall below this target level.

Three main factors make adding new generation in Texas difficult: its deregulated market, regulatory issues specific to ERCOT, and weak market signals.

## A Deregulated Energy Market

As of Dec. 31, 2001, investor-owned utilities (IOUs) in ERCOT were required to unbundle their operations. Following deregulation of the ERCOT electricity markets in areas served by IOUs, the provision of service to end-use retail customers became competitive, and electric providers no longer had a captive body of retail customers. Without a captive body of customers, it became extremely difficult for suppliers to predict prospective demands for power. As a result, they are now generally unwilling to commit to long-term wholesale power purchase agreements or to the construction of new projects.

Although the useful life of a thermal generation facility can exceed 40 years, the capital costs to complete those facilities are extremely high. Though a 40-year power purchase agreement is not necessary to induce investors to build a new power plant, some level of predictable cash flows for a significant period of time will likely be necessary.

Those investors having a larger appetite for risk may be willing to invest without a long-term contract, but in order to do so, these higher-risk investors would also expect higher returns on their investment and would need to see forward pricing fundamentals/signals that suggest that those higher returns are forthcoming.

In recent times, however, the low price of natural gas has depressed the forward market for power and, as a result (with limited exceptions), those higher-risk investors have yet to see sufficient potential returns at the level required to start construction.

Moreover, even if such investors are persuaded that their equity investment is warranted, in most instances, project debt will also be needed to finance construction.

As lenders tend to be risk-averse, securing financing for uncontracted projects is likely to be a challenge in the current debt markets.

## A Unique Regulatory Environment

The Environmental Protection Agency (EPA) has promulgated multiple regulations in recent years that affect the production of electricity. In addition, President Obama recently renewed his commitment to combatting global warming and described his plans to impose strict limits on greenhouse gas (GHG) emissions. These existing and pending regulations affect both existing generation, because the laws will require many owners to complete expensive capital upgrades, and developers of new power generation projects, because of the regulatory uncertainty, the added time required to obtain the necessary permits, and the resultant higher costs of development.

In the case of existing power generation, these regulations will give rise to the need for capital improvements and/or increased costs of compliance for many facility owners. Certain types of existing generation (namely, coal-fired) could be rendered uneconomic and forced offline if the costs to comply with environmental laws exceed the expected profits. Rather than investing significant funds in retrofitting existing units, investors may prefer to dismantle or mothball them if they cannot reasonably expect to recover those additional costs through future operations. In some extreme cases, carbon dioxide emissions standards may not be achievable because the technology does not yet exist to bring plants into compliance. In such circumstances, even if producers were prepared to invest in the necessary capital improvements, they will have no choice but to decommission their units.

Implementation of these new environmental regulations has proven to be particularly difficult in the ERCOT area because of the nature of the deregulated market. In regulated markets, utilities can reasonably expect to be able to recover the added costs of compliance through rate increases for

their customers. In many parts of ERCOT, however, generators have no mechanism by which they can pass those costs along because customers are free to choose another provider at any time.

Development of new generation in Texas has also been rendered more difficult because of the recent changes in federal environmental regulations and Texas's legal challenges to EPA actions. Developers seeking to build new large fossil-fueled power generation facilities must ordinarily obtain a Prevention of Significant Deterioration (PSD) permit under the federal Clean Air Act. PSD permits can be issued by the EPA; however, if a state is willing, the EPA may delegate its authority to the state. Alternatively, in accordance with a concept referred to as "cooperative federalism," if a state develops and the EPA approves a state implementation plan (SIP), which in this context is basically an air permitting program sufficiently similar to that of the EPA, federal law allows the state to run its own PSD permitting program.

In late 2010, the EPA decided that SIPs that did not address GHG-emitting sources were inadequate. At that time, the EPA concluded that 13 states' SIPs did not include

GHG permitting. Twelve of those states either revised their SIPs consistent with the EPA's nascent GHG permitting program or sought delegation of the EPA's authority.

Texas, however, refused. In response, the EPA imposed a federal implementation plan that purportedly put the EPA directly in charge of issuing a part of the PSD permit related to GHG emissions in Texas. As a result, the PSD permitting process became bifurcated between Texas and the EPA, and developers of new power plants are now required to obtain two permits (one from the state of Texas and another from the EPA).

This bifurcation has caused a fair amount of regulatory confusion, which has resulted in a significant increase in the time needed to get full authorization to proceed with new power projects, especially considering the additional requirements imposed by other federal laws, such as the Endangered Species Act, when the EPA is the issuing agency. Furthermore, regardless of which agency is responsible for issuing PSD permits, controlling GHG emissions under the general legal requirement that facilities must apply Best Available Control Technology where no reasonably eco-

nomically control technology exists for carbon dioxide and other GHGs has introduced substantial uncertainty into the permitting process. These added requirements, bureaucracy, and "technical" uncertainties have substantially contributed to the chilling of new development.

### Market Weaknesses

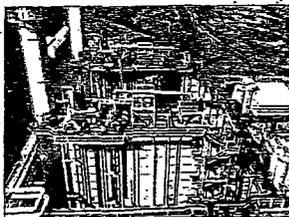
In a market where long-term supply contracts are extremely rare, forward pricing plays a significant role in determining whether an investor will be willing to build a new facility. With most forecasts anticipating low gas prices for the foreseeable future, the market is not currently sending the necessary pricing signals to those power plant developers/investors that might take the risk of building without a long-term contract.

Unlike other regions in the country, ERCOT does not have an organized capacity market (pursuant to which generators can be compensated for having available generation regardless of whether or not such generation is actually producing power). Many market participants in ERCOT believe that the development of a capacity market could help to mitigate the impending supply

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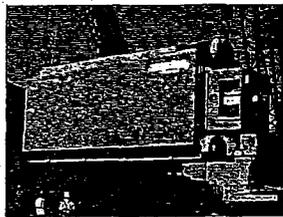
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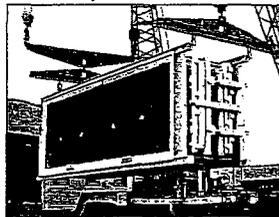
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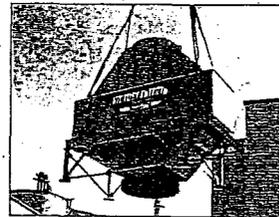
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## ***Certain regulatory changes being considered, along with other commercial innovations, might be just enough to deliver to ERCOT the additional power generation resources that it so desperately needs.***

problem. However, detractors suggest that while a capacity market may help to keep existing power generation units online, it may not provide the necessary incentives to construct new generation.

This is because most envision the development of a capacity market similar to the one that currently exists in PJM (a regional transmission organization that coordinates the movement of wholesale electricity in all or part of 13 northeastern states and the District of Columbia). PJM uses a "reliability pricing model," which is based on the use of capacity auctions to obtain a one-year capacity commitment three years ahead of the delivery period. Though this model does provide some increased certainty around project revenues, that certainty is fairly limited because pricing beyond the near term cannot be predicted and, in fact, is subject to myriad factors that could potentially cause volatility in prices.

As an example, the recent 2016/2017 reliability pricing model auction for PJM resulted (in many areas) in significantly lower prices than those obtained in its 2015/2016 auction, leading many market participants to be concerned with the reliability of the capacity market to be able to support new development. Given the recent events in PJM, questions remain as to whether implementation of a similar capacity market in ERCOT would provide the necessary incentives to both retain existing generators and incentivize new sources of supply.

### **Bridging the Pending Supply Gap**

Though the challenges of power generation facility development abound, all hope is not lost. Certain regulatory changes being considered, along with other commercial innovations, might be just enough to deliver to ERCOT the additional power generation resources that it so desperately needs. Some new generation is being constructed, and efforts are being made to reduce demand and potentially increase revenues for power generators in ERCOT. Additionally, developers are working to find creative ways in which to make new projects economically feasible.

**New Generation.** Even with the challenges affecting developers of new generation, wind power remains economically viable in ERCOT. Through a combination of federal production tax credits and various financial and physical hedging, certain skilled wind power producers have been able to obtain the necessary capital to start construction of new wind farms.

Moreover, the regulatory approval process for wind generation is far less arduous than it is for fossil-fired power generators. While wind energy adds to the available supply in ERCOT, it produces other problems of its own. Intermittency is a material problem, as is the timing of much of the wind generation. Because the wind typically blows strongest at night, it results in a spike in supply when demand is generally at its lowest point. In addition, as the wind cannot be predicted with any certainty, other sources of more reliable power generation must also be included as part of the incremental supply of generation.

Another source of potential supply—energy storage—is being considered by many both because of its ability to balance the timing of power supply and demand and because of its ability to provide another source of revenue (in the form of ancillary services) to the investors in such products.

**Demand Response.** Demand response is a meaningful way to help address ERCOT's pending supply shortfall. The ability to reduce demand through voluntary conservation, however, is limited by the availability of willing participants during peak periods of the day. At some point, though, even full conservation by willing participants will not prevent shortfalls in supply. Although demand response may help ERCOT in the near term, new power generation facilities will ultimately be needed.

**Raising the Price Cap.** In October 2012, the Public Utility Commission of Texas voted to double the cap on wholesale electricity prices over the succeeding three years. The commission stated that raising prices was necessary to encourage more plant construction and prevent power outages in areas served by ERCOT. Although this may encourage more interest in the ERCOT market, the continual increase in

the price cap does not guarantee that prices at those higher levels will actually be achieved. It may actually give rise to potential concerns for investors, because a facility that experiences an outage when it is committed in the day-ahead market could see significant penalties if there is a spike in power prices in the hourly market.

**Capacity Market.** As described above, though there are significant issues to consider with the development of a capacity market in ERCOT, such a regulatory solution may be critical to spawning the much-needed construction of new power generation facilities. In the short term, a capacity market could induce generators to keep existing generation resources online or remove them from mothball status.

Though this may provide a short-term solution, the uncertainty of future pricing remains an impediment to new development. It is also worth mentioning that keeping older generation around, while effective, may be costly in the short term because older units are generally less efficient and more expensive to operate.

**Other Solutions.** Creative structuring has also been used to get new projects built in ERCOT. In addition to the wind facilities discussed above, at least one company has been able to begin new construction on two different gas-fired projects. Panda Energy is currently building two large power generation facilities—Sherman and Temple—and each is being partially funded with project debt. By using revenue put options in lieu of a long-term power purchase agreement, Panda was able to assure its investors of a stable stream of revenues sufficient to obtain the necessary commitment of capital.

### **Reason for Hope**

Although the challenges facing developers in the ERCOT market today are significant, new and creative solutions are emerging that have the potential to provide ERCOT with the energy supply that it needs in the coming years. Energy demand is expected to grow significantly because of the high population growth rate anticipated for the state of Texas. As a result, finding viable solutions to ERCOT's supply shortage is extremely important.

Many of the short-term fixes mentioned above may be helpful in alleviating the problem, but some regulatory changes may be necessary in order to allow ERCOT to be certain that it can meet the demands of its end users over the long term. ■

—*Stuart Zisman is a partner and Katherine Milton is an associate with Bracewell & Giuliani LLP in Houston.*

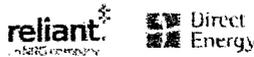
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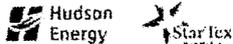
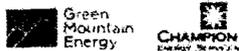
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# Texas State Senator Pressures ERCOT to Leave Reserve Margins Unchanged

Posted on July 17, 2013 by VaultEnergy

Texas State Senator Troy Fraser, a central Texas Republican, warns that an increase in reserve margin would be seen as a backhanded attempt to bring about a capacity market in Texas. The Electric Reliability Council of Texas (ERCOT) had been considering a move to raise the state's reserve margin from the current 13.75% to 16.1%.

The reserve margin is the excess capacity maintained within the state's grid as insurance against unexpected loss in supply or an unexpected spike in electricity demand such as might occur during extreme weather events.

The scorching summer of 2011 was an example of just such an event. The unprecedented heat wave put a great deal of pressure on the Texas electricity grid and threatened the state's electric users with rolling blackouts.

Fraser's argument against the raised reserve margin is twofold. He argues that 2011 was an outlier in terms of Texas weather and that any analysis that uses 2011 data to set the future target reserve margin would be overly aggressive.

In his letter to ERCOT he writes:

*"Both electric end users and I have expressed a desire to exclude extreme years when computing future reserve margins."*

His second, and perhaps primary, argument is that the contemplated raise in the reserve margin would strengthen the case for the controversial proposal to introduce a capacity market in Texas. Under a capacity market, ratepayers would pay power producers to build power plants regardless of whether the resulting power is ever sold. It's a move that would inevitably result in higher electricity rates in the state.

In his words:

*"With the makeup of the ERCOT Board heavily weighted in the electric industry's favor, any vote to drastically increase the reserve margin appears to be self-serving and could increase electric costs for all consumers."*

In the end, ERCOT chose to leave the reserve margin unchanged as of now. Deciding instead to wait and see how the policy debate between the PUC and the Texas legislature plays out.

If a capacity market is eventually instituted in Texas, it would be a drastic change for the nation's largest deregulated electricity market. Under Texas' current "energy only" model, producers are only paid for the electricity they sell to the market.

See Also: Texas Electricity Rates Going Up - Again  
See Also: Texas Electricity: 2013 Outlook Improves

This entry was posted in Texas Electricity and tagged capacity market, ERCOT, reserve margin, Troy Fraser by VaultEnergy. Bookmark the permalink.

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## Can Texas ERCOT Keep the Energy Flowing this Summer?

Posted on June 20, 2013 by Direct Energy Business



*This post was written by Read Comstock, Director, Government & Regulatory Affairs, Direct Energy Services, LLC*

There has been much discussion by policymakers in Texas regarding reserve margins in ERCOT since the extreme weather of 2011 (extreme cold in February 2011 and extreme heat during summer of 2011) stressed the ERCOT

grid. Why is there is so much discussion about ERCOT reserve margins? The quick answer is reliability. The public has an expectation that electricity will be available to power businesses in Texas' growing economy, power air conditioners, power computers, etc.

One indicator as to whether or not ERCOT will have enough power to supply demand is the reserve margin forecast. The reserve margin forecast is a comparison of total forecasted supply in ERCOT to the forecasted power demand (forecasted supply – forecasted demand/forecasted demand = reserve margin). ERCOT's current reliability target is ERCOT should only initiate rolling blackouts due to inadequate supply once every 10 years. This is referred to as a 1 in 10 year loss of load standard. Through study and analysis, ERCOT calculates the level of reserve margin that is needed to deliver the 1 in 10 year loss of load standard. The current reserve margin target to deliver the 1 in 10 year loss of load standard is 13.75%. Twice a year ERCOT releases a Report on Capacity, Demand, and Reserves (CDR Report) in its region that forecasts reserve margins for the next 10 years. The CDR Report issued in May 2013 forecasts a reserve margin of 13.8% in 2014 that declines in 2015 and beyond.



What are regulators doing about the declining reserve margins? It is believed that a combination of weak capital markets, environmental regulations and low energy prices driven by low gas prices create a challenging market for building generation and earning an adequate return on investment. Given that the Texas electric industry is largely deregulated, the Public Utility Commission of Texas (PUCT) can't simply order utilities to build generation. The PUCT has been focused on whether or not the wholesale market design in state needs changes to better incentivize generation investment.

Since the summer of 2011, the PUCT has been focused on increasing energy price signals during times of scarcity. The theory is that a higher energy price signal during times of scarcity will increase the revenue opportunity for generators and fuel greater generation investment. The

*higher prices =  
higher bills for  
customers - even  
for customers in  
areas of ERCOT  
NOT DEREG'D.*

most significant decision by the PUCT regarding scarcity pricing was a decision in the fall of 2012 to significantly increase the price caps in ERCOT to \$5,000/MWh as of June 1, 2013, \$7,000/MWh as of June 1, 2014, and \$9,000/MWh as of June 1, 2015. Under the current market design, the real-time energy price in ERCOT automatically increases to the price cap if ERCOT is relying on Responsive Reserves to meet system demand. In other words, if the system is under stress and relying on reserves to meet demand, then the real-time energy price will increase to the currently effective price cap.

The PUCT is expected to continue discussing resource adequacy intensely during the 2<sup>nd</sup> half of this year. Generation investment appears to remain stagnant even with the PUCT decision to substantially increase the offer cap last year. ERCOT commissioned a report by the Brattle Group in 2012 that advised the Commission that it basically has two market design paths to consider for improving resource adequacy. The first path is to continue down the path of improving/increasing scarcity pricing in the current energy-only market design. The second path is to implement a centralized, forward capacity market similar to the Reliability Pricing Model capacity market in PJM. The PUCT seems committed to continuing down the energy-only market design path, but has not ruled out the implementation of centralized, forward capacity market. It is possible the PUCT will make a decision that will make it clear as to the PUCT's long term solution to resource adequacy (energy-only vs. centralized, forward capacity market). One thing is certain: the industry, from generators to retail suppliers to end-use customers, will all be watching, because any ERCOT policy change is likely to have a direct impact on energy prices for everyone!

This entry was posted in Energy, US Energy Market and tagged electricity, energy, energy market, ERCOT, Texas by Direct Energy Business. Bookmark the

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# Feds Not Optimistic About Texas Electricity Capacity

Posted on June 18, 2013 by VaultEnergy

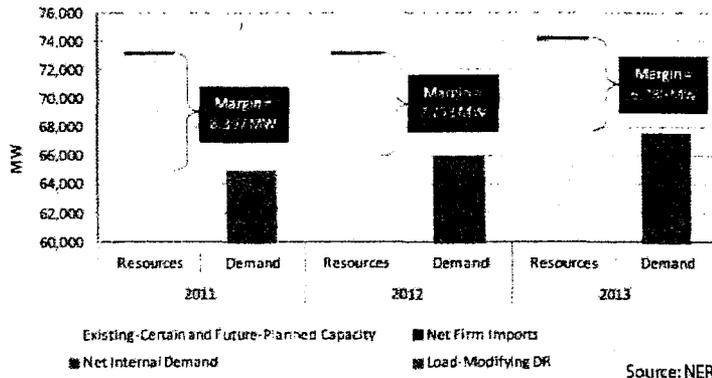
The Electric Reliability Counsel of Texas (ERCOT) is feeling a little better about Texas' chances of having enough electricity to meet demand this summer and in 2014. The North American Electric Reliability Corp (NERC) is not so sure. NERC is the federal authority responsible for the reliability of the country's electricity grids.

ERCOT has issued a number of warnings in recent years about potentially not having enough electricity supply to meet demand during peak periods; warning last summer that blackouts or calls for emergency conservation could occur if there was a sudden spike in demand or unexpected loss of power generating capacity.

At issue is the so called reserve margin. The reserve margin is the safety cushion between expected peak demand for electricity and the supply that the electricity grid is able to provide at full strength. Having an adequate reserve margin insures against blackouts in the event of weather related spikes in electricity demand such as summer heat waves. It also helps in the event that there is a loss in power production as sometimes happens as a result of bad weather.

13.75% is considered an adequate reserve margin for the Texas electric grid. NERC anticipates that Texas will have a 12.88% reserve margin (pdf) this summer. That equates to 6,780 MW of power. ERCOT officials, however, are saying that they are comfortable that the state will make it through the summer without any significant issues based on their projections of a relatively mild summer.

Figure 2: 2011-2013 ERCOT Demand and Resource Projections<sup>9</sup>



Texas, which operates its own grid independent from the major continental US grids, is deregulated and relies on free market dynamics to ensure that there is enough electricity to meet demand and that electricity prices reflect market balance. In this model, independently owned power producers sell their electricity to retail electricity providers in a wholesale market.

Cheap electricity in Texas for the past few years, while great for the consumer, has made it tough for power generators to invest in more capacity. This has resulted in the current tight margin between supply and demand for electricity and has lead some to (unsuccessfully) try to push the state into a capacity market model for electricity. ERCOT indicates that new natural gas power plants expected to come online in 2014 along with an improved demand response program will improve the situation going forward.

This entry was posted in Texas Electricity and tagged capacity market, demand, ERCOT, NERC, reserve margin, summer 2013, summer 2014 by VaultEnergy. Bookmark the permalink.

5.30.13

## Issue Brief: Resource Adequacy

### Definition:

Resource adequacy means that **supply meets or exceeds demand**, now and for a given future time period. Because electric supply and demand are not predictable with exact precision, electric system planners typically plan for supply to be X% higher than forecast peak demand, based on their determination of an acceptable level of reliability. This extra X% is known as the target (or planning) reserve margin.

### How much extra is enough?

The Electric Reliability Council of Texas (ERCOT), the independent electric grid system operator serving most of Texas, currently uses a target reserve margin of 13.75%, based on a reliability target of one "load-shed"/outage event in ten years. ERCOT used a 12.5% target reserve margin from 2002 to Nov. 2010. The North American Electric Reliability Corporation (NERC) assigns a default planning reserve margin (PRM) of 15%, which is used by SERC in the Entergy Gulf States area. El Paso Electric, in the Western Electricity Coordinating Council (WECC), uses a 15% PRM. The Southwest Power Pool (SPP) requires a 12% capacity margin, which translates to a 13.6% PRM for all the other non-ERCOT parts of Texas.

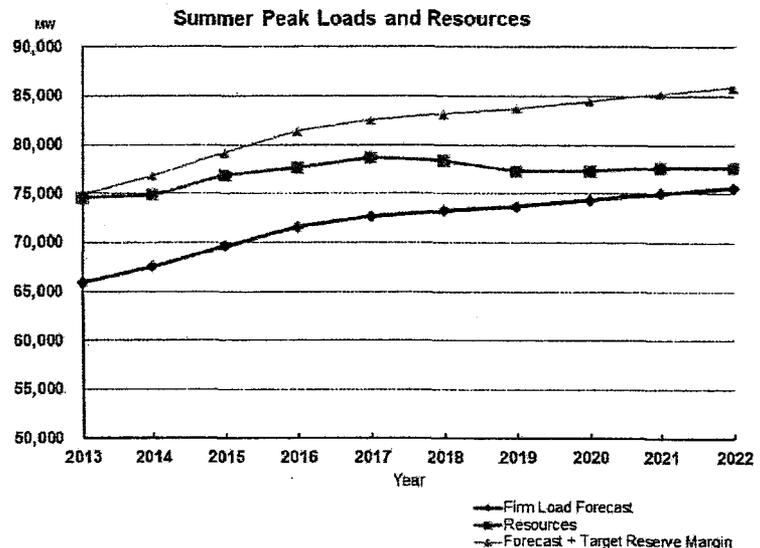
In Jan. 2013, NERC asked ERCOT to report, by April 30, ERCOT's plan to address its projected capacity shortfall and declining reserve margin. ERCOT responded that there's still work to be done. (<http://www.ercot.com/content/news/presentations/2013/SARA-Preliminary-Summer2013.pdf>)

### Focus: Supply or Demand?

Because resource adequacy depends on both supply and demand, it can be met by managing supply, or demand, or both. Historically, the focus has been on increasing supply to meet forecasted demand growth, with less attention on reducing demand. Demand can be quite difficult to forecast for any area (IOU, MOU, co-op, or deregulated) because it depends on factors such as the weather and the economy, which can be rather challenging to predict over the long term. (Note: resource adequacy does not consider outages due to transmission / distribution (e.g., storm-damaged lines), which are far more common than outages due to insufficient generation.) ERCOT's recent Long Term System Assessment, designed to predict future transmission needs, indicates that additional natural gas generation and renewable resources are likely to be competitive; energy storage and demand response may be smaller but important contributors in some scenarios.

### Traditional Providers:

For traditionally regulated investor-owned utilities (IOUs) (which now have about 10% of Texas customer meters), the IOU can request and the Public Utility Commission (PUC) can order the IOU to build or buy new generation capacity. Municipally owned utilities (MOUs) and [rural] electric cooperatives (each with about 15% of Texas customer meters) have the authority to decide the amount and timing of additional generation capacity. Capacity may also be suspended ("mothballed") or retired.



## **"Deregulated" Providers:**

For the deregulated areas (about 60% of Texas customer meters), however, the amount and timing of generation additions are determined by market participants. Furthermore, unlike some other US electricity markets, ERCOT is an "energy-only" market, not a "capacity and energy market." In other words, in ERCOT, a generator is paid only for actual production and is not paid for simply being available and ready to run (with the exception of certain necessary "ancillary services"). It is therefore challenging for a planner to determine the amount of generation to expect in the deregulated areas, especially over the long term. Over the short term, generators must notify ERCOT of their plans so as to allow for necessary studies and interconnection activities. This allows for greater certainty in calculating expected reserve margins for the next few years. Market design / rules change is one major resource adequacy tool used in Texas to cope with uncertainty in a deregulated market.

## **Recent PUC Changes:**

Until several years ago, ERCOT's Capacity, Demand, Reserves (CDR) reports showed expected reserve margins that generally exceeded the 13.75% target for future years. Due largely to (1) recent ERCOT CDRs showing lower expected reserve margins, (2) the Feb. 2011 rolling blackouts due to generation outages forced by extreme cold, and (3) the heat and drought of 2011, the PUC created Projects 40000 and 40268 to consider measures to improve resource adequacy. The PUC considered the comments of ERCOT and numerous interested parties, plus a study with a variety of recommended policy options by the Brattle Group. On Oct. 25, 2012, the PUC decided to raise the high system-wide offer cap (SWOC, also HCAP) from \$4,500/MWh now to \$5,000 in June 2013, \$7,000 in June 2014, and \$9,000 in June 2015. (This followed the PUC's June 2012 decision to raise that offer cap from \$3,000 to \$5,000 effective Aug. 1, 2012.) Though prices are expected to normally be much lower in most hours, the PUC expects that the potential for higher prices in some hours will ensure resource adequacy by providing a greater economic incentive to add generation and to reduce demand. The PUC also increased the low system-wide offer cap (LCAP) and the peaker net margin (PNM) values. The PUC indicated that it plans further steps, possibly including changes to the CDR report assumptions/inputs (Project 41060), plus additional demand response measures (Project 41061). (ERCOT December 2012 Capacity, Demand, Reserves Report) For a concise list of PUC activities addressing Resource Adequacy, see [http://www.ercot.com/content/news/presentations/2013/GCauley\\_NERC\\_042913.pdf](http://www.ercot.com/content/news/presentations/2013/GCauley_NERC_042913.pdf) (ERCOT's response to NERC, dated April 29, 2013.)

## **Five Questions to Consider:**

1. Given the expectation for continued robust natural gas supply, what is the medium term price forecast for natural gas? Is that good/bad for Texas?
2. Should ERCOT's reserve margin remain a "target" or be mandated?
3. To what extent do single-digit reserve margins contribute to reliability risk?
4. What's more expensive: risking brown-outs/ black-outs or paying premiums for assured capacity?
5. Has the PUC done enough?

## **Resources for Further Reading**

- **PUC Project 40,000 (Proceeding to Ensure Resource Adequacy in Texas) documents:** (<http://www.puc.texas.gov/industry/projects/electric/40000/40000.aspx>)
- **Brattle Group report:** ([http://www.puc.texas.gov/industry/projects/electric/40000/Brattle\\_Report.pdf](http://www.puc.texas.gov/industry/projects/electric/40000/Brattle_Report.pdf))
- **Electric Reliability Council of Texas (ERCOT) 2012 Long Term System Assessment:** (<http://www.ercot.com/content/news/presentations/2013/2012%20Long%20Term%20System%20Assessment.pdf>)
- **Preliminary Seasonal Assessment of Resource Adequacy for ERCOT Region, released May 1, 2013:** (<http://www.ercot.com/content/news/presentations/2013/SARA-Summer2013.pdf>)
- **Texas House Select Committee on Electric Generation Capacity and Environmental Effects Jan. 2009 report:** ([http://www.house.state.tx.us/\\_media/pdf/committees/reports/80interim/Electric-Generation-Capacity-And-Environmental-Effects.pdf](http://www.house.state.tx.us/_media/pdf/committees/reports/80interim/Electric-Generation-Capacity-And-Environmental-Effects.pdf))

*This Power Across Texas Issue Brief was published on May 30, 2013*

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## ERCOT expects tight summer conditions, long-term outlook shows improvement

AUSTIN, TX, May 1, 2013 — The Electric Reliability Council of Texas (ERCOT), grid operator for most of the state, is preparing for a hot summer as it continues to evaluate future resource adequacy.

ERCOT today released its final summer Seasonal Assessment of Resource Adequacy (SARA), which anticipates tight conditions this summer, along with the semiannual update to its long-term Capacity, Demand and Reserves (CDR) report, which shows some improvement since the previous report was issued in December 2012.

### Tight summer ahead, conservation calls likely

With tight operating reserves expected this summer, especially during the late afternoon hours on the hottest days, it is likely that ERCOT will initiate conservation alerts or power watches on some days. These alerts ask the public to reduce electric use to help ERCOT maintain reliability of the grid.

"We are expecting above-normal temperatures throughout summer in most areas of the ERCOT region," said Kent Saathoff, an ERCOT executive advisor who has overseen various aspects of grid operations and system planning for several decades. "To help ensure there is enough generation to serve consumer needs, we likely will ask people to conserve power during the hottest hours of the hottest days."

High temperatures typically drive electric demand in the ERCOT region, especially among residential consumers, who use more than half the electricity being consumed during the peak hours of the hottest days when air conditioner use is at its maximum.

ERCOT expects power demands this summer to peak at 68,383 megawatts (MW), slightly above the 68,305 MW all-time record set Aug. 3, 2011. One MW is enough electricity to power about 200 homes in the ERCOT region when electric use is highest, typically between 3 and 7 p.m. during the hottest days of the year.

The amount of generation available to serve peak electric needs is forecast at 74,438 MW, including 925 MW of new coal-fired generation from the Sandy Creek Energy Station in McLennan County and about 700 MW of new wind power resources.

More extreme scenarios could result in more generation outages than the forecast includes or an increase in demand of as much as 2,529 MW, if weather patterns similar to summer 2011 return.

"If generation outages exceed expected conditions during peak demand periods, or if we see a return of record-breaking conditions like those in 2011, ERCOT also may need to implement Energy Emergency Alert actions, with the possibility of rotating outages if needed to protect the grid," Saathoff added.

Drought conditions are not expected to create problems for power plant operations over the summer months. However, if dry conditions persist, some plants may experience operational challenges later in the year.

ERCOT also released a preliminary outlook for fall 2013, which anticipates sufficient resources to serve expected demand.

#### **Long-term outlook shows some improvement, work still needed**

"ERCOT currently expects the planning reserve margin for summer 2014 to be slightly above its current 13.75 percent target, an improvement since the last long-term outlook was released in December," said ERCOT CEO Trip Doggett.

The new CDR shows a planning reserve margin of 13.8 percent for summer 2014, up from 10.9 percent when the last report was released in December. While the peak electric demand forecast for summer 2014 is a little more than 69,800 MW, assuming historical average summer weather, the total amount of anticipated generation resources has increased to nearly 77,600 MW from slightly less than 75,000 MW in the previous report.

The new total includes 385 MW of gas-fired power and 40 MW of new storage capacity in Harris County, as well as 90 MW of gas-fired power in Fort Bend County, 50 MW of new solar power in Bexar County, and about 1,080 MW of new wind generation in various locations. Two projects currently under construction by Panda Power Funds also have adjusted target commercial operations dates to make more than 1,400 MW of new natural gas-fired generation available in time for 2014 summer needs.

The 10-year outlook, which is based on a "Low Economic Growth" forecast from Moody's Analytics and 30-year average temperatures, shows peak demand increasing to nearly 69,700 MW in summer 2015, with growth continuing annually up to more than 76,000 MW in 2023.

Load growth forecasts become less certain in the longer term. Also, available generation capacity only includes resources that have interconnection agreements and any necessary air quality permits in place.

Although reserve margins after 2014 remain below the 13.75 percent target, the future outlook has improved continually since 2011. Additional resources are in various stages of review and may be added to future reports.

#### **Consumers' role in a reliable grid**

"We will continue to ask consumers to use power wisely, especially during the summer peak demand hours of 3 to 7 p.m.," said Doggett. "Voluntary conservation when it is needed most — along with ongoing efforts to expand other demand response options — can help us ensure there is enough power for everyone when generation resources are tight."

To keep up with real-time grid conditions and know when conservation is most important, consumers can download the ERCOT Energy Saver app on Apple (available at the Apple store) and Android (available on Google Play) mobile devices, follow ERCOT on Twitter (@ERCOT\_ISO) or Facebook (Electric Reliability Council of Texas), or subscribe to Emergency Alerts emails on <http://lists.ercot.com>.

###

The Electric Reliability Council of Texas (ERCOT) manages the flow of electric power to 23 million Texas customers -- representing 85 percent of the state's electric load. As the independent system operator for the region, ERCOT schedules power on an electric grid that connects 40,500 miles of transmission lines and more than 550 generation units. ERCOT also performs financial settlement for the competitive wholesale bulk-power market and administers retail switching for 6.7 million premises in competitive choice areas. ERCOT is a membership-based 501(c)(4) nonprofit corporation, governed by a board of directors and subject to oversight by the Public Utility Commission of Texas and the Texas Legislature. ERCOT's members include consumers, cooperatives, generators, power marketers, retail electric providers, investor-owned electric utilities (transmission and distribution providers), and municipal-owned electric utilities.

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Posted: 4:12 p.m. Friday, Nov. 16, 2012

# Utility commission focuses on market fixes for electricity

## Commissioner: Shortages pushed back to 2018?

By Laylan Copelin

American-Statesman Staff

The Texas Public Utility Commission on Friday focused on tweaking the existing wholesale electricity market — even as one commissioner suggested that forecasts of power shortages are both to be expected and are overstated.

Forecasts from state regulators, as well as their consultants, have predicted that the state's primary grid operated by the Electric Reliability Council Texas could experience shortages during peak demands for power on summer afternoons as early as 2014 or 2015.

The problem, according to the Brattle Group, a consulting firm hired by the state, is that wholesale electricity prices are too low to encourage the construction of new power plants to serve a growing economy and increasing population.

The forecasts are on a bit of a slippery slope because there are so many variables, including the weather, to consider.

On Friday, Commissioner Ken Anderson suggested that new figures to be released in December could push the forecast of shortages as far back as 2018. In his written presentation, Anderson included a lower economic forecast, the amount of mothballed generation that could be pressed into service, plus new power plants on the drawing board.

He said there have been similar forecasts of shortages over the years and that is expected in the deregulated wholesale market: "An efficient energy-only market should always show a capacity reserve margin shortfall 4-5 years out."

More important, he said the state's two most recent rolling blackouts, both weather-related, occurred with high reserve margins in 2006 and 2011.

In this instance, Anderson said the private sector might already be responding to changes made by the utility commission and ERCOT, including doubling the \$4,500 cap on wholesale prices over the next three years, as well as other changes under consideration.

That is not to say the problem is resolved.

If Anderson is right, it means the utility has more time to address the issue. And some solutions could take years, not months.

"We're still evaluating options to ensure that the competitive electric market is sending the correct (price) signals to encourage investment in the market," said Donna Nelson, utility commission chair. *AFTER 10+ YEARS OF OPERAT*

Whatever solution is chosen, wholesale electricity prices are expected to increase by at least 30 percent, according to the consultant's testimony. Retail prices would not necessarily increase by the same percentage and there have been different estimates on the overall impact on a customer's bill. *g*

On Friday, the three-member commission focused on increasing operating reserves and creating a market for demand response — paying customers to curb usage during hours of peak demand.

Increasing operating reserves, in effect, would raise prices by reducing the overall generation capacity outside of an emergency.

"Increasing operating reserves appears to be a quick and easy operation that can be achieved by making an administrative change to an existing ERCOT mechanism," Commissioner Rolando Pablos wrote in a memo.

The other two agreed it should be looked into.

The commissioners also agreed demand response should be investigated further.

Large industrial customers already are paid to cut their power demands in times of shortages, but the greatest savings would occur if homeowners and small businesses also agreed to do the same.

The installation of so-called smart meters is almost completed the state's competitive electricity market and that technology makes demand response a viable option to just building more power plants.

The consultants have estimated that ERCOT needs 3,500 megawatts of additional demand response — about 5 percent of ERCOT's current capacity — by 2016.

But creating that market could be difficult and take time.

"I do think demand response will play a part in summer peaks," Anderson said. "It has a role to play, but I want a comprehensive look at how we do that."

Electricity retailers, in particular, could use demand response as a way to hedge their exposure to high prices during peak demand.

Anderson said he wouldn't want to undercut their nascent efforts.

Given the higher caps on wholesale electricity prices, Anderson said, "There's potential for real money to be made."

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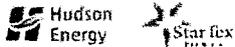
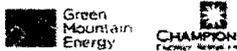
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Texas Electricity Rates Going Up – Again

Posted on October 26, 2012 by VaultEnergy

In a move that was perhaps inevitable, the Texas Public Utility Commission has voted to double the current wholesale electricity price cap in Texas from the current \$4,500 per megawatt hour to \$9,000 per megawatt hour. This is the second wholes rate increase this year. Earlier in the year the commission voted to raise the then \$3,000 price cap to the current \$4,500 cap.

2011 Wholesale Electricity Rate Cap	\$3,000 per megawatt hour
2012 Wholesale Electricity Rate Cap	\$4,500 per megawatt hour
2013 Wholesale Electricity Rate Cap	\$5,000 per megawatt hour
2014 Wholesale Electricity Rate Cap	\$7,000 per megawatt hour
2015 Wholesale Electricity Rate Cap	\$9,000 per megawatt hour

Schedule of electricity rate increases

The commission has been searching for ways to increase electricity rates for Texas consumers. This is seen as a must in order to address the state's electricity capacity concerns. The down-side to the cheap electricity rates in recent years is that electricity producers are not making enough money (so they say) to continue to invest in the Texas market and build new power plants to address pending power shortages.

Because Texas is a power to choose state, regulators don't directly set electricity rates. Retail electric providers purchase power in the wholesale market from producers of electricity in order to resale it to residential and commercial users. In times of high demand relative to the amount of electricity available the wholesale rate can spike dramatically; often reaching the rate cap established by the PUC. It is during these relatively few times that electricity producers make most of their profit. The largest producers of electricity in the state includes Energy Future Holdings, who is also the parent company of TXU.

Officials hope that by tripling this rate cap more money will find its way into the pockets of producers and encourage them to invest more into building new power plants in Texas. Of course, the extra money going to producers has to come from somewhere. Inevitably it means higher electric rates for consumers.

According to numbers published by the Texas Industrial Energy Consumer group, the new higher rate cap would have cost Texas consumers up to an additional \$14 billion had it been in place in 2011.

- See Also: Water And Energy: A Double Dilemma In Texas
- See Also: Will Texas Switch To A Capacity Market For Electricity?
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This entry was posted in Texas Electricity, Uncategorized and tagged power to choose, price cap, Texas PUC, wholesale electricity by VaultEnergy. Bookmark the permalink.

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Posted: 6:14 p.m. Wednesday, Oct. 24, 2012

# Lawmakers urge decision on electricity market

By Laylan Copelin

American-Statesman Staff

State lawmakers on Wednesday grilled utility officials on the cost of addressing the threat of electricity shortages by 2015 and urged the Public Utility Commission to act quickly to choose a solution.

They were told wholesale prices might need to rise 30 percent — though retail rates for consumers might not go up that much — but several hours of testimony underscored that various segments of the industry and its customers, particularly manufacturers, disagree whether the situation is dire enough to dramatically change the wholesale electricity market.

Given that it could take at least three years to build new power plants, Rep. Byron Cook, chairman of the House State Affairs Committee, underscored the risk of not being decisive.

"It's going to be hard to explain it to the public in 2015," Cook told an audience of regulators, consultants and industry officials. "Time is not your friend."

The utility commission is scheduled to meet Thursday, and could vote on proposals to address the threat. One option is withholding existing generation, driving up prices to buy time to develop a market that pays customers to reduce electricity usage during times of shortages. The other is paying generators extra "capacity payments" to build plants.

The Electric Reliability Council of Texas, which operates the power grid for three-fourths of the state, has plenty of power for most of the year, but the historically hot and dry summer of 2011 tested the limits of its reserves.

"We kind of stood on our heads to keep the lights on that summer," said Donna Nelson, chair of the Public Utility Commission.

The state had an easier time this year because of the milder summer, changes in grid operations and the recall of older, mothballed units into service.

But Sam Newell with the Brattle Group, the state's consultants, warned that ERCOT has a structural problem with low wholesale prices that discourage investment in new power plants to keep up with the state's growing economy.

In 2011, when extreme weather temporarily hiked electricity demand and prices, Newell said a power plant would only have made what it needs to average over its lifespan: "You'd have to have weather like 2011 (every year) for the economics to work out for the investor."

Higher prices are inevitable, Newell said, even if the state sticks with its current wholesale system for buying and selling electricity.

Rep. Burt Solomons, R-Carrollton, pressed Newell on how high wholesale prices might go.

At first Newell refused to answer, saying it wasn't part of his analysis or relevant to choosing how to redesign the wholesale market.

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ULATION RETAIN  
ED.*

*VERY INEFFICIENT.*

"Don't you think it's important to give the Legislature and the PUC and the public an understanding of the risk?" Solomons asked. "How is someone going to pick the best model without knowing the cost?"

Newell said there is very little difference in the cost of the two options he is proposing.

"Maybe no one wants to say publicly," Solomons responded.

Newell then said some analysts estimate that wholesale prices might need to rise at least 30 percent to encourage new investment.

Nelson added officials have been hesitant to discuss wholesale price increases because the state's competitive retail market might lessen the impact on customers with new products, such as time-of-use pricing.

John Fainter, president of the Association of Electric Companies of Texas, underscored the dilemma for policy makers: "Nobody wants to pay more for electricity, but they want more reliability."

Newell said the public is intolerant of rolling blackouts because it implies a lack of planning while the public more readily accepts storm outages that occur more frequently.

In the past, ERCOT has tried to maintain an industry standard of averaging one rolling blackout every 10 years.

"The public expects this standard," Nelson told the committee. "I think it would be a mistake to go back on that standard."

But reliability is a function of having enough power in reserve for those few hours of peak demand.

Under the current system, Newell said ERCOT's reserves would have to fall from almost 14 percent to 8 percent before new investment in power plants could be expected.

At that reserve level, the state's primary grid could experience at least one rolling blackout during an average summer but 20 under the historically hot conditions of 2011 when Austin experienced 90 days with triple-digit highs. Those rotating outages, necessary to keep the grid operating, would last about two hours on average, Newell estimated.

Maintaining a 14 percent reserve margin, however, would drop the outages to about two per year under the most extreme temperatures.

"We are headed to 8 percent reserve margin," Newell predicted. "Can you accept those number of (outage) events?"

If not, Newell said, a capacity market ensures greater reliability.

Phillip Oldham, a utility lawyer representing the Texas Association of Manufacturers, disputed that view. He said ERCOT's reserve margin has never dropped below its current rate and doesn't expect it to drop as low as 8 percent.

"I don't think things are as dire as they looked earlier this year," Oldham said. "I think the market is responding."

He also predicted years of litigation and challenges to a new capacity market because so much money is at stake for the various segments of the industry: "It will move billions of dollars around."

Even executives with generating companies took slightly different approaches.

Thad Hill, chief operating officer of Calpine Corporation, supported creating a capacity market as the better choice. But Sam Henry, president of GDF Suez Energy North America, said that it would take three or four years to complete the task.

"Frankly, we don't have time," Henry said.

Hill said the utility commission needs to decide soon: "People are not going to invest in a temporary market while we think about what we want to do."

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*Reply to G. Patterson - uncertainty in market's prompt providers to delay decisions - not necessarily whether a unit is forecasted to be profitable*

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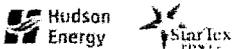
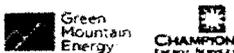
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Texas Electricity Rate Increase – How Much Will Your Bill Go Up?

Posted on June 5, 2012 by VaultEnergy

No, Texas, your electricity bills are not going to triple despite what you may have seen in a number of recent headlines. That's the good news. The bad news is that it seems unavoidable that your electricity rates will go up some.



The misleading headlines of late have been alluding to the PUC plan to raise (triple) the cap on wholesale rates from the current \$3,000 per megawatt hour to \$4,500 in the summer of 2012 and to \$9,000 per megawatt hour by 2015. This wholesale rate cap is not the rate paid directly by consumers. If it were, the average electricity bill in Texas would be a few thousand dollars a month.

As the name implies, the wholesale rate cap is the legal maximum rate that electricity producers can charge for electricity in the real-time wholesale market for electricity in Texas. The cap is only reached under rare circumstances where there is either a huge spike in the demand for electricity, a supply disruption, or both. The wholesale price cap is only reached a tiny fraction of the time. That's a fortunate thing because this rate is many times more than what consumers typically pay for electricity in Texas. For example: the cheapest electricity rates in Houston are around 8 cents per kwh. That equates to \$80 per megawatt.

NO IT DOESN'T KWH ≠ 1000 MW - no hour in unit

Texas electricity officials hope the increased price cap will incentivize producers to build new power plants to help fill the need in Texas for more power. Lack of incentive is a serious problem for the Texas power grid. Deregulated electricity in Texas means the state relies on private investment to ensure that power plants are built. Like any other free market, producers produce their product (in this case electricity) in hopes of reselling it at a profit to consumers.

But recent market conditions have spooked would-be electricity producers. The large drop in natural gas prices in recent years has squeezed the margins out of the electricity production business. Private capital that might otherwise have been used to build new power plants is being put to use in other ventures that promise higher returns, lower risk, or both.

This leaves operators of the Texas grid in a difficult situation. The Texas economy continues to stubbornly grow. This creates more and more demand on the grid. However, at the current rate of investment supply is not going to keep up.

So what does all this mean? Are my rates going up?

Unfortunately, it's almost a certainty that retail electric rates will go up; though they won't triple. One study put the potential consumer impact of a raise in the wholesale rate cap at about \$15 per month once the cap goes to \$4,500 this summer and \$40 per month once the cap hits \$9,000 in 2015.

So what can I do to keep from seeing my bills go up?

One thing consumers can do is conserve during peak hours for electricity demand. These are the times when capacity shortages are felt and wholesale prices spike. The other thing you can do is make sure you have compared rates and that you are on the cheapest electricity plan available. With dozens of electric providers in Texas rates can sometimes vary dramatically from one company to another.

This entry was posted in Texas Electricity and tagged electric bill, PUC, rate cap, rate increase, Texas electricity, wholesale rates by VaultEnergy. Bookmark the permalink.

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Updated: 5:11 a.m. Wednesday, May 23, 2012 | Posted: 10:34 p.m. Tuesday, May 22, 2012

## ERCOT: State faces potential power shortages for the next decade

By Laylan Copelin

AMERICAN-STATESMAN STAFF

The state's primary electricity grid operator is projecting potential power shortages during peak demand times over the next decade, putting more pressure on attempts to encourage conservation and raise the cap on wholesale prices.

The Electric Reliability Council of Texas, commonly known as ERCOT, on Tuesday released its 10-year forecast, which takes into account the growing demand for electricity, weather conditions, the economy and plans for new generation.

"To ensure future electric reliability in the ERCOT region, we need to take immediate steps to address this issue — on both the supply side and the demand side of the resource adequacy equation," said Trip Doggett, CEO of ERCOT.

Texas is being squeezed between a growing economy demanding more power and a lack of new generation plants. Industry officials have said that new power plants aren't being built because wholesale prices are either too low or too erratic.

*despite high rates?*

A split Public Utility Commission of Texas voted 2-1 last month to consider raising the cap on wholesale prices from \$3,000 to \$4,500 per megawatt-hour by Aug. 1, prompting two state lawmakers to question whether the commission is moving too fast without considering the eventual impact on customers' electricity bills.

Tuesday's forecast is likely to add fuel to that debate.

ERCOT tries to maintain a 13.75 percent reserve over its peak power demand forecast to deal with extreme weather or failures at generation plants.

During 2011, however, ERCOT experienced rolling blackouts on Feb. 2 when many power plants tripped because of extremely cold weather. Then last summer, it narrowly avoided more rotating outages because of the extreme heat and drought.

Thanks to a milder weather forecast for this summer and operational changes made by ERCOT, officials expect to avoid a repeat of last summer. But the long-term forecast shows reserves declining quickly, beginning in 2014, raising at the least the prospect of rotating outages.

The forecast shows ERCOT's reserve margin dipping from 13.75 percent to 9.8 percent as early as 2014 and to 6.9 percent by 2015.

It gets worse in later years, but projections are harder to nail down the farther out they are.

On a conference call Tuesday, Warren Lasher, the director of system planning for ERCOT, said the primary concern is between 2014 and 2016 because so little new generation is being planned.

*NOT SUFFICIENT TIME TO BUILD  
NEW GENERATION NOT ALREADY PLANNED.*

By now, people planning power plants would be getting permits and contacting ERCOT about hooking up to the grid, but Lasher said the list of future projects is too short for comfort.

"Even if all those projects get built, we won't have enough reserves to ensure the reliability of the system," Lasher said.

To bridge the gap, ERCOT already is relying on older plants that had been mothballed. It also is changing its program that pays industrial and commercial customers to interrupt their power during emergencies and is adding customers who generate their own power on-site.

*so much for efficiency.*

Eventually, however, many industry experts say new generation must be built, and that typically takes at least two years for most technologies.

"New generation can still be built in the 2014-2015 time frame," Lasher said.

At the Public Utility Commission, the debate is over how quickly to act on wholesale prices.

During an April hearing, Chairwoman Donna Nelson urged raising the cap on wholesale prices by Aug. 1.

Nelson argued that wholesale prices are too low to attract investment in new power plants and said investors need to see that Texas is addressing the issue quickly.

"I do think we need a strong (price) signal," Nelson said.

Commissioner Ken Anderson opposed raising prices this summer.

He said that nobody can get new generation in place by Aug. 1 and that a higher cap on wholesale prices might just enrich power generators if peak demand is reminiscent of 2011.

"You're carting money away, not in wheelbarrows, but in Mack trucks," he said.

Many lawmakers favor action by the commission, but Rep. Sylvester Turner, D-Houston, and Sen. Wendy Davis, D-Fort Worth, urged caution.

"Nobody wants rolling blackouts," Davis wrote to the commission. "Neither do we want higher electric bills. In both instances, Texas consumers and businesses suffer."

Turner noted that the power industry, which urged the Legislature not to intervene several years ago when high wholesale prices were hurting consumers, is now asking for market intervention.

Turner and Davis urged the commission to study the impact on consumers' bills before acting.

The commission is not expected to vote on raising the cap on wholesale prices until next month at the earliest.

On June 1, an outside consultant will deliver a report on how Texas can encourage the construction of new plants.

Contact Laylan Copelin at 445-3617

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Updated: 10:51 p.m. Thursday, Feb. 9, 2012 | Posted: 10:50 p.m. Thursday, Feb. 9, 2012

# Lawmakers press regulators to explain how electricity reserves have suddenly waned

By Laylan Copelin

AMERICAN-STATESMAN STAFF

Texas' risk of running short on electricity reserves over the next two years has risen dramatically in the past six months, as about 13,000 megawatts of planned new generation projects were either canceled or suspended, regulators told state lawmakers Thursday.

That surprised at least one member of the House State Affairs Committee, Rep. Rene Oliveira, D-Brownsville, as the panel investigated whether the state's competitive electricity market can keep the lights on.

"I'm still a little stunned we couldn't anticipate it," Oliveira said. "I think what you are telling me is a 'perfect storm of events' that surprises me."

The historically hot and dry summer of 2011 exposed thinner than expected reserve margins as the Electric Reliability Council of Texas, the state's largest electricity grid that includes Central Texas, narrowly avoided rolling blackouts.

But Donna Nelson, chairwoman of the Public Utility Commission of Texas, said several factors are contributing to what could become a shortage of electricity reserves by 2014.

The price for natural gas, which is used to generate electricity, is at historically low rates. That is good for some sectors of the Texas economy but translates into lower wholesale electricity prices. Those lower prices are discouraging investments into new generation plants, Nelson testified.

Rep. Charlie Geren, R-Fort Worth, summed up the lack of investment: "Real cheap electricity is not as good for our constituents as we'd like for it to be."

Nelson also said that electricity prices are being distorted by federal subsidies for renewable energy, as well as by necessary efforts by ERCOT to ensure that the grid operates smoothly with the demand for electricity increasing.

She said federal regulatory uncertainty also affects plans for future plants.

ERCOT manages the electricity grid for 75 percent of the state and 80 percent of its population, including Dallas, Houston, San Antonio and Austin.

Trip Doggett, ERCOT's president and CEO, gave the committee two charts demonstrating the state's diminishing forecast for electricity supplies.

In May, the forecast showed healthy reserves, assuming future projects came online. But the experience of the summer of 2011 caused ERCOT to take another look at future projects by both private companies and publicly owned utilities.

"We dug very deep into (planned) projects," Doggett said. "A number of the projects are going to be canceled."

*MARKETS - BUILDING NEW CAPACITY ONLY IF PRICES ARE HIGH & INCREASING.*

By December, the forecast looked very different from May. Projects accounting for about 13,000 megawatts — about 17 percent of ERCOT's current peak capacity — are either being canceled or suspended.

Future projects still being studied aren't enough to give Texas its desired reserves.

"Even with the uncommitted projects, we fall significantly below our reserve margins," Doggett said.

Rep. Byron Cook, a Corsicana Republican who chairs the State Affairs Committee, drove home Doggett's point.

"If we don't bring on more generation, you can't assure dependability on this grid?" Cook said. "I'm really concerned how we bridge the gap."

Nelson, an appointee of Gov. Rick Perry, said the state remains committed to its competitive market. (Austin Energy and other publicly owned utilities and rural cooperatives are exempted from retail competition for electricity but buy and sell electricity on the wholesale markets. They also would be affected by any rolling blackouts.)

Unlike some other states with a competitive market, Nelson said Texas is the only state with an energy-only market. Those states pay utilities to build extra capacity, while Texas expects the free market to build what it needs.

"We pay generators only when they generate electricity," she said.

Nelson said she believes paying utilities to build extra capacity helps only incrementally because the "capacity contracts" are only for three years. She said investors want to see projections of a healthy 20-year revenue stream before building new generation.

"My goal is to hit that sweet spot between reliability and cost," Nelson said.

To address the problem, Nelson said the Public Utility Commission will be encouraging Texans to conserve and will expand its program of paying industrial customers to interrupt their electricity service during peak summer hours when demand threatens the grid.

She said the commission also wants to encourage the development of utility-size electricity storage, which could store cheaper power to be used during more expensive peak hours.

ERCOT also has about 1,500 megawatts of generation mothballed, but that power is from older plants that can't compete in the market without higher prices. It takes one to six months to put a mothballed plant back into service, Doggett said.

The Public Utility Commission and ERCOT also are working on its rules to minimize distortions in the competitive market.

For example, the price for electricity escalates during peak summer hours, encouraging more generators to sell electricity. But industry representatives have complained that the wholesale price is depressed when ERCOT dispatches standby plants to ensure the grid operates smoothly.

The utility commission and ERCOT are working on how to dispatch standby power or mothballed plants without undercutting higher wholesale prices.

Despite the problems, one industry representative said regulators — not lawmakers — should address the issues.

"We think this has been an entirely successful market," said Barbara Clemenhagen, president of Texas Power Competitive Power Advocates, whose members produce 70 percent of the state's electricity.

But, Clemenhagen added: "Markets are only perfect in theory. They evolve over time."

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*i.e. letting high market prices of gen units prevail  
cause rates of bills to increase.*

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## ERCOT's \$661 million system to change how power is priced in Texas

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By Laylan Copelin

AMERICAN-STATESMAN STAFF

After years of cost overruns and delays, Texas is assured of having the most complicated wholesale market for electricity in the country by the end of the year.

It remains to be seen whether it is the most efficient.

The Electric Reliability Council of Texas, commonly called ERCOT, is planning to launch its new market management system Dec. 1, amid criticism from consumers and second-guessing by the Texas Legislature.

The Public Utility Commission, which authorized the so-called nodal project in 2003, estimated it would deliver \$5.6 billion in consumer benefits over its first decade of operation.

But the creation and implementation has been anything but smooth.

Trip Doggett, ERCOT's chief executive, said the system is very complicated.

"It was 'Big Bang,' " said Doggett, referring to its creation, "and state of the art."

The cost escalated from \$95 million to \$644 million, and the launch is two years past due, as industry interests created the market system they wanted. The nodal system will now be the backbone of Texas' \$34 billion market for electricity.

ERCOT operates the state's primary electric grid, a system that carries 85 percent of the state's load to 22 million customers over 75 percent of Texas, including Austin.

Its employees do that around the clock in two secure, high-tech control centers, in Taylor and Austin, where banks of monitors and other displays allow them to track demand and generation across the state.

Most electricity is purchased under long-term contracts, but demand fluctuates daily. To manage that fluctuation, ERCOT puts buyers and sellers together in the wholesale market at a moment's notice.

Like an air traffic controller, ERCOT is responsible for directing traffic as electricity is transmitted around the state from generators to customers. In deciding how to direct that traffic, ERCOT uses the market price.

For example, say Austin suddenly needs more electricity because of a particularly hot afternoon or downed transmission line. ERCOT typically chooses the cheapest bid from a generator, but in the example of a downed transmission line, it may choose power with a higher cost to achieve the best route for getting the electricity from the generator to the customer.

Today's wholesale market operates in four broad regions within ERCOT. The new system replaces that with 8,200 pricing nodes — every location where electricity is uploaded by generators or downloaded by retailers of electricity.

To achieve that level of detail, the new database includes every piece of equipment — power lines, transformers and substations, for example — in the ERCOT region.

That will allow ERCOT to determine power prices at a much more detailed level and identify inefficiencies.

The nodal project is designed to make that market more efficient, saving consumers money and easing traffic congestion on the transmission lines.

The theory behind the new system is that the market will encourage the construction of more efficient power generation where it is needed at the expense of older, costlier generators that cannot compete in the spot market.

For the first time, the new system also creates a "day ahead" market, allowing power buyers and sellers to plan for daily variations ahead of time.

Grid operators in other states use similar computer models to manage their wholesale markets. Unlike ERCOT, however, they have other computer models for operating the grid and for planning.

Texas chose to *do everything with one dynamic computer model* that must be updated constantly as a growing state adds and retires electrical equipment.

That's one reason the project was time-consuming and expensive, Doggett said.

The cost overruns for the nodal project comes against the backdrop of an organization whose staff and budget already were accelerating as its role changed because of deregulation of the electric market.

#### **Spiraling expenses, complexity**

Since 2001, when the Legislature designated ERCOT as the independent operator of the grid, its staff has grown from 254 to 698 today. Its annual budget has increased to from \$60 million to \$267 million. It has accumulated \$365 million in debt.

ERCOT costs a typical residential consumer \$9.57 a year, although consumers don't see that expense as a separate item on their bills.

A few bucks on an annual electric bill may not seem like much, but it becomes a large amount when charged to millions of customers.

The nodal project accounts for almost half of that annual fee.

Doggett, who first joined ERCOT as a consultant on the nodal project, says the initial projection that the system would cost \$95 million was unrealistic.

The best analogy might be buying a car. A consultant's initial estimate might have bought a Mini Cooper. But an array of industry interests who sit on the ERCOT board weighed in.

Texas now has a Cadillac Escalade — with armor plate.

"It's not a system you can go down and buy at Best Buy," said Mike Cleary,

ERCOT's chief operating officer.

To be fair, Doggett said, every market participant worried that the system would favor a competitor and wanted special needs addressed.

"The good news is, at the end of the day, Texas will have the best system," Doggett said.

#### **Questions of cost, control**

To ERCOT's critics, the cost overruns, delays and what they consider lax oversight of the project raise the specter of unintended consequences and market manipulation.

"Nodal in Texas is going to be more complex than anyplace in the country," said Geoffrey Gay, a lawyer representing more than 100 cities in the ERCOT region. "The guys who can deal with the complexity are not you and me or my clients. It's companies with computer models."

John Fainter, president of American Electric Companies of Texas, attributes some concerns to the fear of a new, complicated system.

"If anybody has evidence of anti-competitive behavior, we encourage them to come forward," he said. "The nodal system is designed to improve transparency."

Fainter and ERCOT officials say the competitive nature of the electric market, plus oversight by state authorities, should protect consumers.

Fainter said the industry should not be blamed for the project's problems.

"I don't think it's any one group's fault," he said. "But the responsibility stops at the top."

The problems are prompting the Legislature to weigh in.

ERCOT is not a state agency, and its budget does not go through the appropriation process. It began as a nonprofit corporation that linked the state's electricity companies before deregulation.

With deregulation, the Legislature designated ERCOT as the grid's independent system operator and put it in charge of the deregulated wholesale market, as well as being responsible for assuring the reliable delivery of power in Texas.

The Public Utility Commission, with members appointed by the governor, has oversight over ERCOT, but a legislative report noted that the PUC had not reviewed ERCOT's spending in four years because of quirks in the system. The Legislature is expected to address that.

#### Operating at a remove

The essential question for the Legislature, however, is whether the 16-member board of directors that oversaw the design of the new market system should manage it in the future.

The staff of the Texas Sunset Advisory Commission, an arm of the Legislature, suggested shrinking the size of the board and including only members not affiliated the industry. Its report noted that ERCOT is the only transmission system operator in North America that does not have a board whose members are not affiliated with the industry it serves.

But lawmakers on the sunset commission reversed that staff recommendation. They increased the size of the board to 17, included more consumer representation and kept eight industry representatives.

ERCOT's allies say a board with industry representatives and consumers ensures expertise from all segments to today's electricity market.

Critics say ERCOT's network of technical committees below the board provide plenty of industry expertise.

"We still believe ERCOT remains controlled by the dominant generators," said Gay, the lawyer for the coalition of cities.

It is an issue that the Legislature is expected to revisit when it convenes in January.

By then, the nodal system should be operating.

At ERCOT, CEO Doggett and operations chief Cleary noted that the nodal system was being tested — successfully — even as the grid set records for electricity usage this summer.

That's not to say there isn't risk.

Over the first few months of operation, the question will be whether all of the segments of the Texas electricity market are in sync with the new system and understand the rules.

"It's a very complex market," Cleary said, "with a lot of diversity."

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