Business // Energy

A May price spike shows vulnerability of power market to manipulation — and cost to consumers

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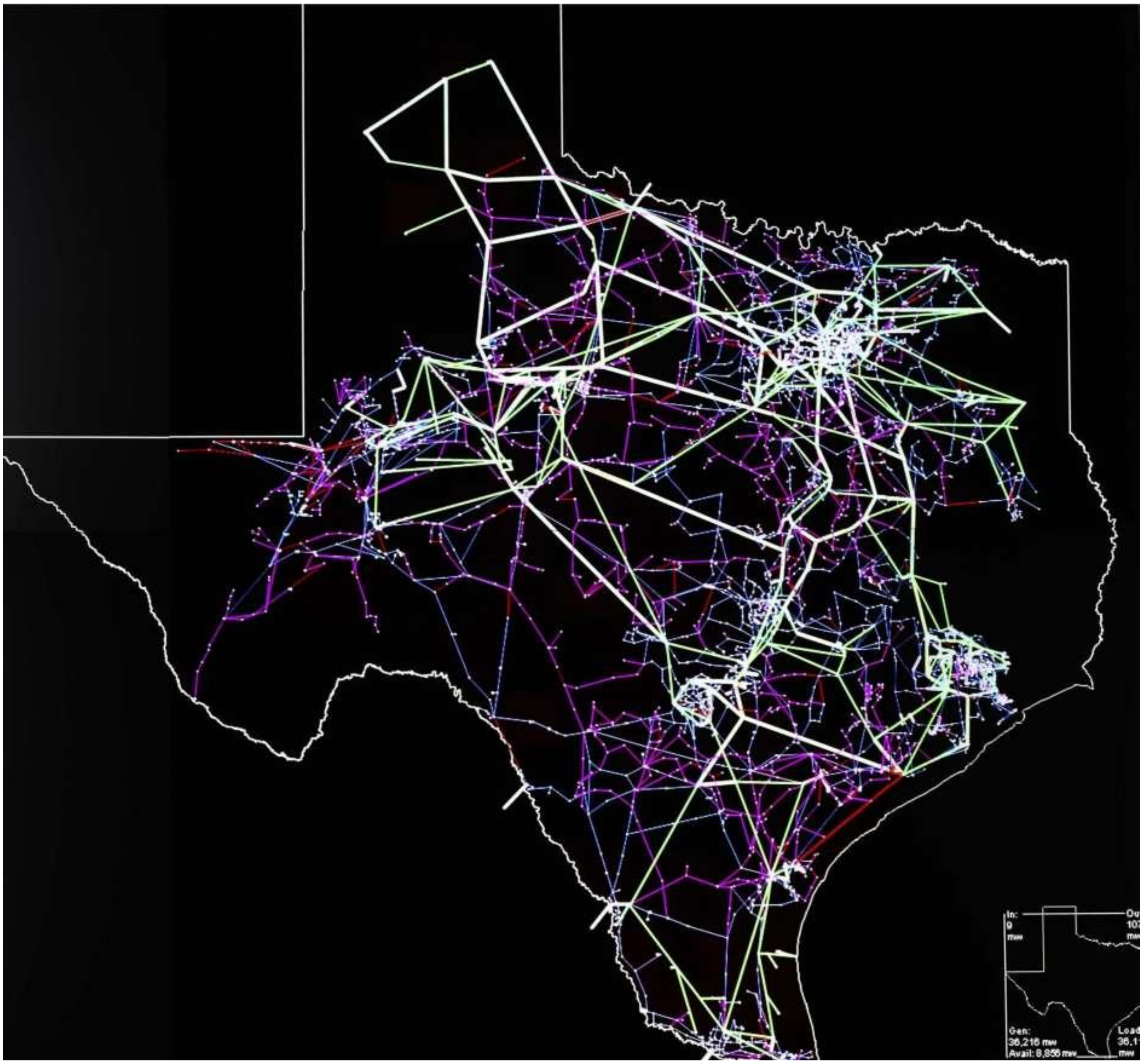

(1of2) A view of the state's power grid in the ERCOT control room. Calpine has claimed responsibility for a data error that sent wholesale power prices spiking at the end of May and, according to an estimate from a commodity trading firm, cost consumers, industrial customers, power traders and retail electric providers more than $18 million and Photo: Kin Man Hui, Staff / San Antonio Express-News

(2of2) Adam Sinn, president of the electricity trading firm Aspire Commodities, has asked the Public Utility Commission to require generators to repay a $18 million windfall after prices spiked to $9,000, the highest allowed in Texas.Photo: Melissa Phillip, Houston Chronicle / Staff photographer

The error was inadvertent, an unknowing mistake by an IT worker, and was corrected in three minutes. But within those moments, the price of electricity on Texas' wholesale market soared from about $40 a megawatt hour to $9,000.

Calpine, one of the nation's biggest power companies, last week claimed responsibility for the price spike, admitting the data it sent to the state's grid manager erroneously showed some 4,000 megawatts of generation — enough to power about 800,000 Texas homes — coming offline during a late May afternoon with temperatures in the 90s. The Houston company has called on the grid manager, the Electric Reliability Council of Texas, to reprice the transactions and order refunds to wholesale customers.

The episode, which generated an immediate windfall of $18 million for power companies and tens of millions more from futures contracts priced higher as a result, illustrates how vulnerable the electricity market in Texas is to manipulation. It also shows how bad data, whether by accident or design, finds its way into the control systems of ERCOT and drives wholesale power price higher.

The Calpine incident is far from isolated and unusual only in that the details have become public. Power companies have exploited weaknesses in the design of Texas' deregulated market almost from the day it began operating in 2002 and often done so with few consequences, reaping windfalls that have cost consumers, traders, industrial customers and retail power companies hundreds of millions of dollars, according to court records, regulatory filings, market reports and interviews with analysts, commodity traders and other experts.

In four months between March and June alone, the consulting firm First Principles Economics of Houston found 55 incidents of power inexplicably moving on and off the market, likely boosting prices and raising red flags about the integrity and oversight of data that controls the flow and cost of electricity in Texas. In a recent filing with the Public Utility Commission, ERCOT said it receives inaccurate production data from generators as frequently as once a day.

Lawmakers and regulators, meanwhile, have done little to harden the system against manipulation and, in some ways, provided incentives for companies to game the market. When it finds irregularities that push prices artificially high, ERCOT rarely reprices transactions and orders power companies to give up the gains. Within an hour after discovering Calpine's error in May, for example, ERCOT said it would allow generators to pocket the money.

In addition, when regulators have taken action against potential market manipulation, they have reached settlements with large power producers that essentially allow companies to manipulate prices, as long as they don't do it too much, regulatory documents show**.** They also have granted small power producers immunity from manipulation charges on the theory that small companies don't control enough supply to influence markets — even though small amounts of power can have dramatic effects on prices when supplies are tight.

On HoustonChronicle.com: Calpine admits error that sent power prices soaring

Even small shifts in the market can add up. In 2013, irregular market movements by a small player boosted wholesale electricity prices by less than $1 per megawatt hour, according to an estimate by the state's independent market monitor. But those movements increased the cost of electricity in Texas by as much as $330 million or about $10 per household, said Ed Hirs, energy economist at the University of Houston.

"A dollar here, a dollar there, it doesn't seem to matter to ERCOT," said Hirs. "No one holds them accountable."

ERCOT declined to comment. A spokesman for the Public Utility Commission, which oversees the wholesale power market, said the agency is committed to protecting customers and fostering competition. The commission, said Andrew Barlow, "consistently acts to preserve the fairness of our state's competitive electricity marketplace and its proven ability to provide affordable, reliable power to our state."

At the beginning

The Texas wholesale market is complicated and opaque, differing from other states in two major ways. In most states with deregulated power markets, bids submitted by generators is public.

Second, the generation data that grid managers rely on to secure and price power comes through independent third parties.

In Texas, bidding is conducted in private and data comes from the generators themselves. Based on that data, ERCOT secures power to meet demand in 5 to 15 second intervals, starting with the lowest bids and working up until it has enough. The highest bid it accepts becomes the price paid to all companies. That means producers withdrawing or withholding supplies from the market for even a few seconds can create artificial shortages to drive prices higher, according to energy analysts.

Two decades ago, industrial power buyers, backed by the soon-to-be disgraced Enron, lobbied the Texas Legislature to break up utilities that generated, distributed and sold electricity and create competitive markets in power generation and retail sales, leaving distribution as a regulated monopoly. The industry called it deregulation, but the new markets came with a new set of complex rules.

Almost immediately, Texas legislators, regulators and consumer watchdogs raised concerns that the system could be manipulated. It didn't take long before Texas regulators started to spot pricing shenanigans. The Public Utility Commission launched an investigation in 2002 into companies scheduling more power than they would deliver as a way to create artificial congestion on transmission lines, which increases prices. Four generators were required by the commission to return $10.5 million in ill-gained profits.

After that incident, the commission detailed to lawmakers how power companies could game the market. In addition to creating artificial congestion, generators could misrepresent production schedules and employ "hockey stick bidding," in which a generator bids a small portion of its power at an unusually high price. If the grid manager accepts all available bids, then the most expensive one — the tip of the hockey stick blade— establishes the market clearing price.

Texas Commercial Energy of Plano was one of the first retail electric providers in Texas in 2002. It was in bankruptcy the following year when prices soared to $990 per megawatt hour — just $10 shy of the then-$1,000 price cap — forcing the company to buy expensive power to fulfill its contracts, according to a federal lawsuit the company filed against several generators and ERCOT.

On HoustonChronicle.com: ERCOT rejects opening electrial can of worms

Texas Commercial blamed the price spike in February 2003 on a generator that made a 1 megawatt "hockey stick bid" of $990 per megawatt hour. The generator, which was not identified, offered the rest of its power for $200 or less a megawatt. The single high bid, however, meant that seven hours of power over two days was sold at $990 per megawatt hour.

The Public Utility Commission investigated and determined that hockey stick bidding had increased the cost of power in Texas two to three times during that two-day stretch and added $17 million to the bills of consumers and businesses. The staff recommended changes so the top bidder could no longer set the market price, but was opposed by generators.

Bullet-proof

The commission launched another inquiry after the independent market monitor, Potomac Economics of Fairfax, Va., hired in 2006, found evidence that power companies were withholding generation from the market.

The following year, commission staff reported that TXU, now a subsidiary of Vistra Energy, abused its market power by keeping electricity off the market, driving up prices by nearly 16 percent and costing $70 million. TXU raked in nearly $20 million in additional profits, according to the commission, which recommended TXU pay $210 million in penalties and restitution. An administrative law judge reduced the penalty to $15 million, the maximum allowed in Texas,

TXU settled the case without admitting wrongdoing and emerged from the episode with new protections from future allegations of market manipulation. The company agreed in 2007 to a "voluntary mitigation plan," which, in exchange for meeting certain unspecified conditions, provided an absolute defense against allegations of market-power abuse. Other companies soon sought similar deals, and today some of the state's biggest generators are protected from allegations of artificially inflating prices through strategies that make supplies appear tighter than they are.

Calpine first initiated a mitigation plan in 2013 which has been expanded and remains in effect today. The agreement allows the company to sell up to 10 percent of its capacity for $500 per megawatt hour and sell another 5 percent at $9,000 per megawatt hour, the highest price permitted in Texas. The deal covers about 700 megawatts of power sales for Calpine.

NRG, the biggest seller of electricity in Texas, is allowed to sell up to 3 percent of its capacity from each natural gas generating unit at $9,000 per megawatt hour. The plan also permits NRG to sell another portion of its natural gas and coal output for whatever price is greater: $500 per megawatt hour or 50 times the natural gas price. The deal covers about 500 megawatts of NRG power sales.

Neither Calpine or NRG would comment on their mitigation plans.

To critics, the plans provide a way to drive prices higher with the approval of regulators. When regulators agree to these kind of deals, they are effectively saying they don't have the resources to determine whether price spikes are legitimate, said Robert McCullough, an Oregon energy analyst who follows deregulation issues.

"It's like telling a bank robber you can rob a bank but take only $100,000," he said.

Small fry

If regulators consider companies' generation capacity too small to control the market, those generators have an iron-clad defense against manipulation charges. But that protection can cost Texas consumers because small players still have enormous pricing power, according to the independent market monitor

The monitor reported that in 2013 it observed that French-owned GDF Suez, now known as Engie, structured its bids to keep power off the market and drive up prices. That year, the average wholesale electricity price climbed 19 percent.

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But GDF Suez escaped scrutiny because the company, under Texas regulations, was considered a “small fish,” controlling less than 5 percent of total generation capacity in the ERCOT system and by rule unable to exercise market power. The small fish designation meant that GDF Suez, with nearly 4,000 megawatts and 4.85 percent of the market, had "an absolute defense” against allegations of withholding power to manipulate the market.

But the market monitor in its annual report reasoned that a company with 4,000 megawatts could drive prices to the then-cap of $5,000 per megawatt hour by withholding power. On Sept. 3, 2013, for example, GDF Suez notified ERCOT that some of its supply was no longer available, causing prices to jump to $4,900 per megawatt, according to a federal lawsuit filed by trading firm Aspire Commodities.

Aspire alleged it lost hundreds of thousands of dollars because of GDF Suez. Aspire sought damages under the federal Commodity Exchange Act, but its suit was dismissed because the alleged misconduct took place in the ERCOT system, which is not federally regulated. The decision was upheld on appeal and ERCOT’s small fish rule prevailed. Today, Texas has more than 400 power generators that are considered small fish. according to Public Utility Commission records.

Neither Engie nor ERCOT would comment.

Back to May

The Public Utility Commission unanimously rejected a request in 2014 to eliminate the “small fish swim free” rule, arguing the competitive market keeps any one small generator from dominating. But, with summer power reserves at record lows, the issue resurfaced at the commission board meeting last month when commissioners questioned whether the small fish rule is still good idea.

“I actually believe the whole thing should be eliminated,” said PUC chairman DeAnn Walker.

When Texas deregulated the electricity market two decades ago, electricity prices were capped at $1,000 per megawatt hour. After intense lobbying from generators that said they needed more incentives to build new generation, the commission raised the cap to $3,000 in 2012, $5,000 1n 2013 and $7,000 in 2014. The most recent adjustment in 2015 took the cap to $9,000.

Texas is the only deregulated state in which generators are not paid for keeping generation capacity in reserve to meet peak demand. The only way they can make money is by selling power, which puts pressure on regulators to ensure companies earn sufficient profits so they will participate in the market.

Earlier this year the commission increased a price supplement that allows generators to earn more on high demand days. The latest increase — with another planned for spring — is expected to increase wholesale electricity costs by as much as $4 billion a year, according to an estimate by Chicago-based power generator Exelon, which sought the increase along with Calpine and NRG.

On the afternoon of May 30, the temperature was a bit higher than normal, but not hot enough to cause capacity problems. In Texas, prices change every 15 minutes based on calculations made every five or so seconds that measure available supply, demand and offering prices. In the 15-minute interval before the prices spiked, electricity was selling for about $40 a megawatt hour.

But during the 15 minutes in which prices skyrocketed to $9,000, every generator in the market was paid about $1,400 per megawatt hour. Prices then dipped to $29 per megawatt hour.

Less than one hour after the pricing error, ERCOT said it investigated the incident and determined it would not correct the prices. That decision meant generators could keep the money.

ERCOT said in a regulatory filing last week that it can't get into the practice of adjusting prices because it receives incorrect information from generators as often as once a day. Making price corrections on that scale, according to ERCOT, would cause market instability and increase price uncertainty.

Customers have little recourse. Under a state law passed in 2011, consumers, industrial users and retail electricity providers have no standing to intervene in negotiations involving potential market manipulation. The parties are limited to the generator, the independent market monitor and the Public Utility Commission. It's left to regulators to determine if the outcome is in the public interest.

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This has added to a lack of accountability from generators and regulators, said Tim Morstad, associate state director of the senior citizen advocacy group AARP Texas, which intervenes in electricity cases on behalf of consumers. Ever since Texas adopted a competitive market, regulators have said consumers need to be heard, Morstad said. But when consumers don't have a say in how market rules are enforced, they are left only to choose an electric provider.

"It doesn't matter who you're with," said Morstad. "If the market is getting manipulated at the wholesale level, everyone is getting ripped off - except the one that did the funny business."

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