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Texas' deregulated system of electric generation
does not require utilities to keep enough capacity
to serve every customer in their area.

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FAILURES OF POWER

Texas lawmakers, leaders had three key chances to shore up a weak grid. But they didn't.

By James Osborne, Eric Dexheimer and Jay Root STAFF WRITERS

Mark Mulligan / Staff photographer

Homes in Houston's Westbury neighborhood are covered in snow on Feb. 15. Winter Storm Uri led to the deaths of 200 Texans and caused massive blackouts for days across the state.

THE SERIES

Twenty million Texans lost power in a deadly freeze after state lawmakers brushed aside a decade of warnings about the increasingly vulnerable electric grid.

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Power market expert Alison Silverstein prepares to testify at the Texas Capitol on May 6. "Everyone has been in denial," she says of the state grid's growing vulnerability.

Texas' deregulated system does not require
utilities to keep enough capacity to serve every customer in their area.

Eric Gay / Associated Press file
Bill Magness, then president and CEO of the Electric Reliability Council of Texas, testifies Feb. 25 during a joint public hearing on the factors that led to statewide blackouts earlier that month.

Ten years ago, Texas power plants froze during a fast-moving winter storm, causing rolling electricity blackouts across the state. Outraged Texas regulators and lawmakers, vowing to crack down, debated requiring energy companies to protect their equipment against extreme weather to ensure reliability.

But they didn't.

Nine years ago, two state agencies that regulate utilities and the oil and gas industry warned that natural gas facilities that lost power during outages couldn't feed electricity generation plants, creating a spiral of power loss. The agencies jointly recommended that lawmakers compel gas suppliers and power plants to fix the problem.

But they didn't.

Eight years ago, economists warned that the state's free-market grid left companies with little incentive to build enough plants to provide backup power during emergencies. With the support of then-Gov. Rick Perry, legislators and regulators considered increasing power rates to encourage the construction of more power plants, so that Texas, like other states, would have sufficient reserves.

But they didn't.

In the wake of each power failure, or near-failure, over the past decade, Texas lawmakers have repeatedly stood at a fork in the road. In one direction lay government-mandated solutions that experts said would strengthen the state's power system by making it less fragile under stress. The other direction continued Texas' hands-off regulatory approach, leaving it to the for-profit energy companies to decide how to protect the power grid.

In each instance, lawmakers left the state's lightly regulated energy markets alone, choosing cheap electricity over a more stable system. As a result, experts say, the power grid that Texans depend on to heat and cool their homes and run their businesses has become less and less reliable — and more susceptible to weather-related emergencies.

"Everyone has been in denial," said Alison Silverstein, a consultant who has worked with the U.S. Department of Energy and formerly served as a senior adviser at the Federal Energy Regulatory Commission. "They treat each individual extreme event as a one-off, a high-impact, low-frequency event, which means, 'I hope it doesn't happen again.' "

With each passing year, the grid has steadily become less reliable. In 1989, Texas suffered a cold snap considered worse if not equal to the winter storm earlier this year yet managed to keep the grid functioning, with only a few hours of rotating outages.

By comparison, February's Winter Storm Uri brought the Texas power grid to within five minutes of complete collapse, officials acknowledged. Millions of residents were left without power for days in subfreezing temperatures; nearly 200 died.

"Our system now is more vulnerable than it was 30 years ago," said Woody Rickerson, vice president of grid planning and operations at the Electric Reliability Council of Texas. "With the generation mix we have now, the weather has the ability to affect wind and solar and (the gas supply). Those are things we can't anticipate."

Good for big business

The modern deregulated Texas power market was set up in the late 1990s to replace the state-controlled system through which Texans had gotten their electricity for close to a century. Rising power prices had become increasingly unpopular among the public and industry, in particular the petrochemical plants and refineries lining the Gulf Coast.

In terms of prices, the plan worked — especially for big business. Since 2001, the last year before deregulation, average industrial electricity rates in Texas declined by 7 percent, according to federal data ending in 2020. Over that same period, average residential rates grew almost 30 percent, though they remain well below the national average.

Cheap power for industry has fed the oil and petrochemical boom along the Gulf Coast and West Texas and attracted new companies to Houston, Dallas, San Antonio and Austin. It also created a new industry, power retailing, with hundreds of companies springing up to act as middlemen, negotiating lower prices from generators in order to amass more customers and boost their profits.

"This was never done to benefit the residential customer," said Robert Cullick, the former head of communications at the Lower Colorado River Authority, the Austin-based nonprofit that manages power plants and hydroelectric dams across Texas. "It was for the big guys and those who wanted to sell power into the market and make big profits."

Under the old system, utilities had to keep enough capacity to adequately serve every customer in their area. But under deregulation, that responsibility was handed to the so-called "invisible hand" of the free market.

The system worked for a time, relying primarily on old infrastructure built during the regulated era. But as that equipment aged and the state's population boomed, Texas' power grid has become increasingly strained.

2011: Anger, sticker shock

The first real sign of trouble came in February 2011, when freezing temperatures across Texas forced ERCOT to rotate outages for two days ahead of Super Bowl weekend, impacting 4.4 million customers.

Lawmakers assessing the fallout were incredulous and angry. Was Texas — no stranger to hurricanes and other weather catastrophes — really so ill-prepared to handle a nasty winter storm?

“There’s no secret that winter comes around once a year,” said Sen. Mike Jackson, R-La Porte.

Legislators introduced a flood of bills, requiring the Public Utility Commission to buy more backup generation and penalizing companies that didn’t meet reliability standards. But as they would time and again in the years ahead, Texas elected leaders opted not to take significant action, convinced their free-market power system — less regulated than any grid in the country — ultimately would find a way to keep the lights on.

PUC chairman Barry Smitherman was asked during the ensuing hearings whether the Legislature needed to change the law to force power plants to weatherize. Smitherman demurred.

“I think we have all the authority we need, Mr. Chairman,” Smitherman said, adding that the PUC would consider tweaks to its rules to ensure that the grid remained reliable. “The companies are going to have to take the initiative to get this done.”

Behind the scenes, electric utilities and large consumers of electricity, such as refineries and manufacturers, were lobbying hard against stronger winterization measures, arguing it would raise energy costs, recalled Tom “Smitty” Smith, who at the time led the activist group Texas Public Citizen.

A recent study by the Federal Reserve Bank of Dallas estimated the cost of winterizing natural gas plants after the 2011 storm — the largest source of outages during the February blackout — at $95 million in today’s money. Much of that would have fallen on the state’s industrial companies, which account for more than half of Texas power consumption.

In Austin, those companies wield outsized influence. Representatives of the energy, natural resources and waste industries spent a combined $64 million lobbying the Texas Legislature in 2011 — more than any other sector — according to an analysis of 2011 lobbying contracts by the liberal watchdog group Texans for Public Justice.

“It might have cost an extra few dollars a year on the average residential consumer electric bill to have protected ourselves from this problem,” Smith said. “Our legislators got convinced by the big electric utilities and industrial customers that this would cost too much.”

2011: Toothless regulation

As a result, the only legislation to come out of the 2011 storm was a minor bill from then-state Sen. Glenn Hegar, a Katy Republican, which required power companies to file weatherization plans with the PUC each year.

Two months after that bill was signed into law, the Federal Energy Regulatory Commission and the North American Electric Reliability Corporation put out a report of more than 350 pages, urging Texas to enact stricter weatherization standards for power plants and natural gas operators.

And they did to a degree, with ERCOT putting out best practices, conducting annual workshops and inspecting plants every three to four years.

But there were two problems. First, despite FERC’s recommendation, the state Legislature never gave the PUC authority to penalize power plants that did not comply, making weatherization voluntary. While progress was made, some companies opted not to bring their plants up to code, said Rickerson, the ERCOT vice president.

“Ultimately, those were financial decisions that had to be made,” he said. “How much is someone willing to invest in a power plant that’s 50 years old and going to retire in a few years?”

More significantly, the best practices ERCOT was sharing were designed for a cold snap like that seen in 2011. While cold, with temperatures in Dallas dropping as low as 15 degrees, it was nothing compared to the 1989 winter storm, when temperatures dropped to 7 degrees in Houston and minus-7 in Abilene, let alone 1899, when the state’s all-time low temperature of minus-23 degrees was set in the Panhandle town of Tulia.

So when temperatures dipped into the single digits for days on end this February, most Texas power plants were simply not prepared. Exterior control equipment and fuel lines froze, not to mention coal piles and wind turbine blades.

“One power plant under freezing for 200-plus hours. That’s not a thing, right?” said Chris Moser, executive vice president of operations for NRG Energy, of expectations going into the winter. “If you look at the math ERCOT did prior to the seasonal assessment, it looked like (there was plenty of power). But then you have 80 to 85 plants not showing up. It was a failure of imagination.”

As for Hegar’s legislation, it has proved even more toothless than it appeared at the time.

According to a recent report from ERCOT, the agency was never given authority to judge the weatherization plans but only to check that they were being implemented. And a requirement in Hegar's bill that the PUC produce a one-time Weather Emergency Preparedness Report, which was quietly published in 2012 and found that many power companies were still doing a poor job implementing reforms, drew little attention from state officials.

"When you're on the commission, you're dealing with what's immediately in front of you," said Ken Anderson, a former public utility commissioner. "I'm not sure how much follow-up occurred."

A decade later, Hegar, now the Texas comptroller, described his bill as politics being the art of the possible, saying the Legislature should have taken a "much more active role" in 2011.

"It's almost like an obstacle course," Hegar said. "There's a lot of people laying in the darkness and in the weeds that are trying to kill your stuff, and you don't even know who they are."

2012: Hard 'no' from oil

Texas' natural gas system also froze up during the 2011 storm, but the gas producers got even less scrutiny than the power companies.

Shortly after that event, federal officials recommended the state consider "minimum, uniform standards" for winterizing natural gas wells and processing facilities, as well as labeling them critical facilities exempted from rolling blackouts, like hospitals and water treatment plants.

But oil and gas companies, a lobbying force without equal in Austin, resisted.

The industry has long held sway over politicians in Texas, where it is not only a huge employer but also a massive campaign contributor. Perhaps nowhere is that more apparent than the oddly named Texas Railroad Commission, where fundraising from the very companies the agency regulates is considered essential to winning a seat on the three-member commission.

"Gas is nearly unregulated," said Peter Cramton, a former ERCOT board member and economist at the University of Maryland. "The Railroad Commission's mission is quite different than the mission of ERCOT, which has a public service mission. Their mission is to support the oil and gas industry."

There is no indication the Railroad Commission even considered the federal recommendation that it mandate gas facilities weatherize after the failures of 2011.

Even now, in the wake of the devastating blackout in February, Railroad Commissioners are resisting such standards, with Railroad Commissioner Wayne Christian calling those efforts part of a "never-ending war against fossil fuels" in a March op-ed in the Wall Street Journal.

Even the task of getting gas facilities exempted from rolling blackouts never came to fruition, with only small numbers of companies alerting utilities to their need.

In 2012, the Public Utility Commission and Texas Railroad Commission jointly published a report calling for better coordination between the gas and power sectors to ensure a more reliable gas supply during power shortages. The following spring, the Railroad Commission issued a letter urging operators of gas infrastructure such as pipelines and compressors to sign them up as “critical loads,” warning, “many natural gas facilities rely on electricity to operate.”

But few gas facilities did, a failure that would come back to haunt them when Winter Storm Uri hit in February.

When temperatures began falling around Midland three months ago, gas production plunged more than 20 percent over five days, according to estimates by the research firm Wood Mackenzie. But production would drop far further when ERCOT began rotating outages Feb. 14, leaving gas operators that had not enrolled as critical facilities without power.

Oncor, the utility covering North and West Texas, said only 35 gas operations in the Permian Basin had signed up prior to the February cold snap — compared to the almost 170 that signed up after they had already been shut off during the freeze.

Testifying at the Legislature after the storm, Christi Craddick, chair of the Railroad Commission, said she didn’t know that companies could sign up to avoid having power shut off.

“I didn’t know that was an opportunity,” she said. “We didn’t have anything on our website. And really it’s a function of working with those energy companies and ERCOT to put those people as priority.”

But when the Railroad Commission issued its 2013 letter about the importance of exempting critical gas infrastructure from blackouts, Craddick’s name was on the letterhead.

Jennifer Hubbs, a former analyst at the PUC who wrote the Texas Energy Assurance Plan, said there was little appetite among Craddick and other officials to effect real reforms in the system.

“The few steps we were permitted to take (such as the RRC letter) were ignored and forgotten,” she said.

Craddick spokeswoman Mia Hutchens said Craddick “was not aware” of the 2013 letter when she testified in February.

Under the existing system, there is limited incentive for natural gas plants to weatherize.

Unlike power plants, which under ERCOT rules are required to buy electricity in the event they cannot generate — often at inflated prices — natural gas producers are assessed no penalty for failing to deliver.

When wells freeze, they’re not producing gas and therefore not making money. But during such a shortage, a natural gas company producing at only half its normal output still could make 50 times what it would on a normal day. Gas prices on the Houston Ship Channel soared more than a hundredfold, from $3.72 per Million British Thermal Units on Feb. 11 to $400 on Feb. 17.

Vistra Energy, one of the state’s biggest power generators known for its TXU Energy brand, started receiving word from its gas suppliers on Friday, Feb. 12, that because of the freezing conditions it would not be able to deliver on its gas contracts for the coming weekend, said CEO Curt Morgan.

“We had to go into the open market and buy what gas we could find,” he said. “In that one week, we spent double what we spent in all of 2020.”

For the oil and gas sector, however, the blackout presented a potentially large financial windfall.

The president of Jerry Jones’ oil and gas company, Comstock Resources, called the blackout a “jackpot” on a call with investors, while the pipeline company Kinder Morgan reported a $1.4 billion profit for the first three months of the year, more than twice what analysts had anticipated, primarily on the basis of gas sales during the blackout.

In recent months, gas producers have acknowledged the need to weatherize their operations against the cold. Yet they continue to argue that government mandates requiring them to do so are unnecessary.

“The market can provide the signals that are necessary to make sure the product flows,” said Todd Staples, president of the Texas Oil and Gas Association.

2013: Scoffing at safety net

In 2013, lawmakers had another opportunity to make the grid more reliable. They didn’t just pass on it; they shot it down.

After the rolling blackouts in February 2011 and a historic run of hot days that summer, warnings came that Texas’ reserve margin — the amount of power the grid could generate in case of an emergency — was running dangerously low.

The Texas Public Utility Commission began to examine shifting to a so-called capacity market like those in the Northeast. Power plants there bill ratepayers not just for the electricity they sell but for maintaining capacity for times of high demand.

Armed with studies predicting imminent disaster, Texas power companies got the support of Gov. Perry, who in 2013 called his advisers to his office to debate the merits, said Pat Wood, the former chairman of the state utility commission and the Federal Energy Regulatory Commission.

Perry said, “Look, it’s a political issue and you guys know it better than I do,” according to Wood.

But the commission quickly drew the wrath of large industrial and commercial customers, including the influential refining and petrochemical companies, who argued forecasts of power shortages were overblown and predicted billions of dollars in costs for consumers if the commission went ahead.

“If something is a needed improvement to reliability, we will support it,” said Katie Coleman, an attorney representing large industrial and commercial power customers, in an interview. “The problem with the capacity market is it’s three-year forward projection that may have nothing to do with supply and demand.”

Outraged by the prospect of raising power prices, Troy Fraser, the state senator who had led the charge toward deregulation 15 years earlier, called a hearing three days before Thanksgiving, ordering industry and officials to explain themselves.

Testifying in the wood-paneled meeting room of the Senate Committee on Natural Resources, John Fainter, a veteran lobbyist for the power industry — since deceased — warned: “It’s important reliability be kept first and foremost, not profit.”

Republicans and Democrats alike were incensed, looking at the proposal not as a legitimate warning about the future of the grid but as a money grab at the expense of consumers and industry.

Fraser grilled utility commissioner Brandy Marty, a former chief of staff to Perry, asking how she thought $4 billion a year in additional power costs might impact the surge of businesses moving to Texas.

“You have a history in the governor’s office of being very pro-business and trying to recruit business in Texas,” he said. “Our energy cost is about half of (California’s), and one of the reasons we’re getting a lot of our industry is because” of cheap electricity.

“How much is this going to cost our school districts?” asked Sen. Rodney Ellis, a Democrat representing Houston. “We don’t want blackouts or brownouts, but there ought to be some middle ground.”

Fraser declined an interview request, saying, “I don’t do interviews any more since I left.”

But his intent at the hearing was clear, said Bill Peacock, who at the time served as vice president of the right-leaning Texas Public Policy Foundation.

“It was the Legislature telling the PUC: ‘This is not your job,’ ” he said.

Ellis, now a Harris County commissioner, defended his opposition as protecting underfunded schools, adding the Legislature’s “biggest mistake” on power came in creating “a market-based system that does not adequately serve our state.”

It is unclear how much a capacity market would have changed the outcome of the winter storm earlier this year.

But the ferocity with which the oil and manufacturing firms attacked the capacity market proposal effectively sidelined the issue of substantive change in the Texas power market to improve resilience. Instead of a capacity market, the state utility commission — with the backing of industrial customers — opted for a more modest shift in the rules, allowing for payment to power plants that were at the ready to come on in times of power shortages.

Experts said gas plants today are better prepared for summer conditions than they were a decade ago. Yet the rule change has done little to get new power plants built, let alone weatherizing them for winter weather.

“The problem was everybody decided to get collective amnesia,” said Silverstein, the energy consultant. “Every August and September it’s all hands on deck, with everyone hand-wringing until we get through the summer peak. And then they say, ‘The ERCOT market worked.’ ”

Until it didn’t.

Coming Monday: ‘Energy capital’ on its knees. james.osborne@chron.com
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