BEFORE THE

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

TREE TOP, INC., a Washington Corporation Complainant, v. CASCADE NATURAL GAS CORPORATION, a Washington Corporation Respondent.	)	DOCKET UG-210745

EXH. BGM-6

Selected Reports and Articles Regarding 2021 Texas Energy Crisis

DIRECT TESTIMONY OF BRADLEY G. MULLINS

ON BEHALF OF

TREE TOP, INC.

April 8, 2022

Markets

Natural Gas Wells Are Freezing Up in Texas and It's Going to Get Worse, Industry Warns

Ice forms on a Texas street sign in Richardson, Texas, on Feb. 3. *Photographer: LM Otero/AP/Shutterstock*

By Joe Carroll
February 3, 2022, 7:11 PM GMT+2

Natural gas production will continue sliding in Texas as a winter storm freezes wells and other equipment in the biggest gas-producing U.S. state, an industry group warned.

Early indicators “suggest production declines will increase throughout the day,” the Texas Oil & Gas Association said in a release on Thursday. “Factors include icy roads, some power loss, high winds, mechanical issues and freezing equipment that is being addressed by personnel in the field.”

About 5% of overall U.S. gas production has been knocked offline as sub-freezing weather blankets Texas and neighboring Oklahoma, BloombergNEF said earlier in the day. The interruptions probably will take several days to correct, BNEF analyst Jade Patterson said.

Outages “are anticipated and unavoidable in inclement weather,” the Austin, Texas-based industry group said. “Some early reports of transportation problems and getting service trucks to sites due to icy road conditions could have impact if prolonged.”

AON

Global Catastrophe Recap

September 2021

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Appendix: Updated 2021 Data

United States

Date	Event	Location	Deaths	Economic Loss (USD)
01/01-12/31	Drought	Nationwide	N/A	3.0+ billion
01/11-01/13	Severe Weather	Northwest	2	675+ million
01/17-01/20	Severe Weather	California	0	350+ million
01/24-01/27	Severe Weather	Plains, Midwest, South	1	120+ million
01/24-01/29	Flooding	West	2	1.75+ billion
01/30-02/03	Winter Weather	Midwest, Northeast	4	100+ million
02/08-02/12	Winter Weather	Plains, Southeast, Mid-Atlantic	9	75+ million
02/12-02/20	Winter Weather	Western, Central, Eastern U.S.	215	23+ billion
02/25-02/26	Severe Weather	Texas	0	210+ million
02/25-03/01	Flooding	Plains, Southeast, Mid-Atlantic	1	150+ million
03/08-03/10	Flooding	Hawaii	0	50+ million
03/09-03/11	Severe Weather	Plains, Midwest	0	75+ million
03/12-03/15	Winter Weather	Plains, Rockies	0	75+ million
03/16-03/18	Severe Weather	Plains, Southeast	0	500+ million
03/22-03/23	Severe Weather	Plains	0	315+ million
03/24-03/26	Severe Weather	Plains, Southeast, Midwest, Northeast	6	1.7+ billion
03/27-03/29	Severe Weather	Tennessee Valley, Mid-Atlantic	8	1.7+ billion
04/06-04/08	Severe Weather	Plains, Midwest, Southeast	0	880+ million
04/09-04/11	Severe Weather	Plains, Southeast	3	945+ million
04/12-04/14	Severe Weather	Plains, Southeast	13	215+ million
04/15-04/16	Severe Weather	Texas	0	1.45+ billion
04/18-04/18	Severe Weather	Southeast	0	25+ million
04/21-04/22	Severe Weather	Northeast	0	75+ million
04/23-04/25	Severe Weather	Plains, Southeast	1	390+ million
04/27-05/02	Severe Weather	Plains, Southeast, Mid-Atlantic	0	3.4+ billion
05/03-05/05	Severe Weather	Plains, Southeast, Mid-Atlantic	4	1.25+ billion
05/06-05/11	Severe Weather	Plains, Southeast	1	350+ million
05/14-05/19	Severe Weather	Plains, Southeast	5	1.9+ billion
05/22-05/27	Severe Weather	Plains, Midwest	0	525+ million

NEWS RELEASES

FERC to Examine Potential Wrongdoing in Markets During Recent Cold Snap

February 22, 2021

The Federal Energy Regulatory Commission (FERC) announced today that its Office of Enforcement is examining wholesale natural gas and electricity market activity during last week's extreme cold weather to determine if any market participants engaged in market manipulation or other violations.

If the Office of Enforcement finds any potential wrongdoing that can be addressed under FERC's statutory authority, it will pursue those matters as non-public investigations.

FERC explained that this examination will take place as part of the Division of Analytics and Surveillance's (DAS) ongoing surveillance of market participant behavior in the wholesale natural gas and electricity markets. The Division uses market participant-level trading data and data from the financial markets to screen daily and monthly trading at the majority of physical and financial natural gas trading hubs in the United States and the organized and bilateral wholesale electricity markets. DAS closely identifies and scrutinizes any potentially anticompetitive or manipulative behavior to determine if an investigation is appropriate.

Throughout this process, the Office of Enforcement will work with FERC's federal partners as necessary and appropriate.

R21-22

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Green
Energy & Science

Gas Sellers Reaped $11 Billion Windfall During Texas Freeze

- Natural gas producers reduced output days before power cuts
- Millions face prospect of higher gas prices for years to come

By Kevin Crowley, Naureen S Malik, and Mark Chediak
July 9, 2021, 5:00 PM GMT+3

The official autopsy of the great Texas winter blackout of February 2021 quickly established a clear timeline of events: Electric utilities cut off power to customers and distributors as well as natural gas producers, which in turn triggered a negative feedback loop that sunk the state deeper and deeper into frigid darkness.

It's now becoming clear that while millions of Texans endured days of power cuts, the state's gas producers contributed to fuel shortages, allowing pipelines and traders to profit handsomely off them.

More from
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Interviews with energy executives and an analysis of public records by Bloomberg News show that natural gas producers in the Permian shale basin began to drastically reduce output days before power companies cut them off. As the flow of gas cratered, everyone scrambled to secure enough supply, sparking one of the wildest price surges in history. Power producers were forced to pay top dollar in the spot market for whatever gas they could find. Soon customers will be saddled with the bill.

And it's a big one: The total comes to about $11.1 billion for a storm that lasted for just five days, according to estimates by BloombergNEF analysts Jade Patterson and Nakul Nair. The cost of gas for power generation alone was about $8.1 billion, or 75 times normal levels. A further $3 billion was spent by utilities providing gas for cooking, heating and fireplaces. The BNEF estimate is based on spot prices at major hubs assessed by S&P Global Platts rather than private contracts, so is likely an upper limit of the total cost.

Millions of Texans are now faced with the prospect of paying higher gas prices for years as utilities seek to spread the cost over a decade or more. Texas lawmakers have set aside $10 billion to help natural gas utilities cover their natural gas costs from the storm through low-interest, state-backed bonds.

A special legislative session convened Thursday but the agenda did not include any measures to fix the power grid. This week, Governor Greg Abbott appeared to double down on his early assessment that wind and solar were prime culprits of the freeze. Even though gas failed in its role as a reliable backup fuel during the freeze, Abbott pushed regulators in a letter to strengthen incentives for fossil fuel and nuclear generators while increasing "reliability costs" for intermittent renewable power sources.

What Abbott didn't mention was the massive windfall key industry players made during the freeze. Energy Transfer posted its highest quarterly net income on record, more than three times its previous best quarter.

This is "the most massive wealth transfer in Texas history," said Ron Nirenberg, mayor of San Antonio. "Energy market participants took full advantage of the declared disaster, or did not take the appropriate steps to stop the exorbitant and unconscionable prices."

Energy Transfer said years of investment meant it was able to keep its pipelines running and sell gas from storage, providing critical supplies when others could not. Its prices were fully negotiated and set by the market, the company said.

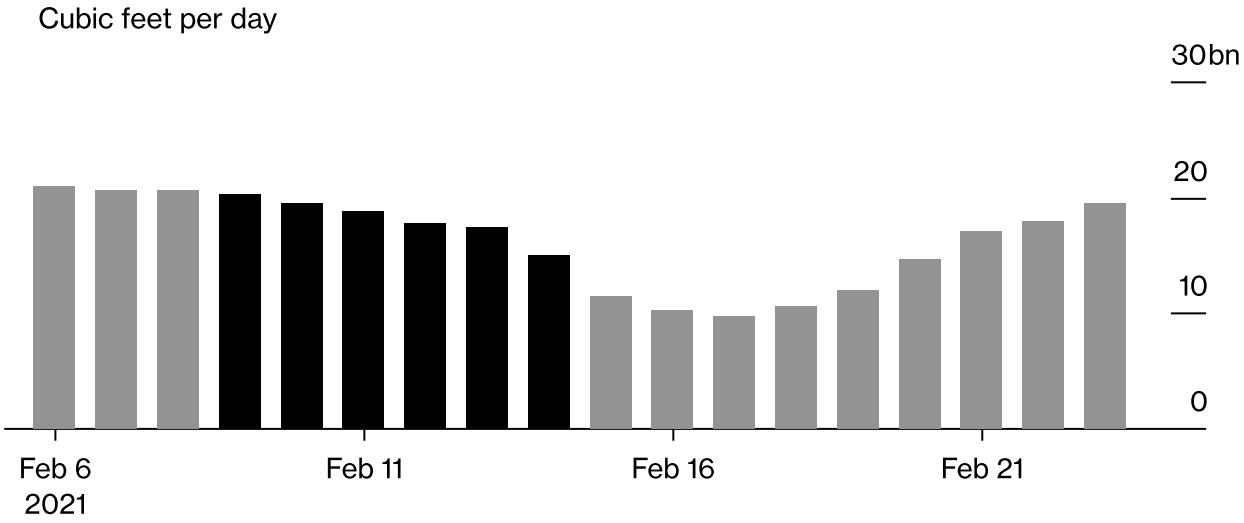
Multiple Systemic Failures

At its peak, Winter Storm Uri left the Texas grid nearly 50% short of the power it needed, causing widespread blackouts 500 times worse than those affecting California during the wildfires of 2020. Multiple parts of the system were to blame: regulators failed to predict the severity of the low temperatures, power producers underestimated demand, wind turbines froze and coal and nuclear plants tripped offline.

But the largest point of failure was generators powered by natural gas, according to the Electric Reliability Council of Texas. Most of it was attributed to weather-related breakdowns and idled plants. Some producers shut in their wells as a preventative measure; massive amounts of water are used in fracking and operators feared the cold weather would freeze wells, pipes and roads.

Gas Failure

Half of the drop in Texas gas production was before the first power cut



Source: Bloomberg data

As the cold weather swept through west Texas, the state's gas production tumbled by some 11 billion cubic feet over nine straight days from Feb. 9. Crucially, 52% of the drop in volume came before ERCOT's first power cut in the early hours of Feb. 15, according to data compiled by BloombergNEF.

On Feb. 11, two pipeline companies, Targa Midstream Services LLC and DCP Midstream LP, were forced to shut gas-processing facilities due to freezing weather, according to filings with the Texas Commission on Environmental Quality. Immediately, prices skyrocketed .

The following day, Vistra Corp., the largest retail power provider in the country, received multiple force majeure notices from gas suppliers, explaining they would not be able to fulfill their contractual obligations to supply the required volumes of gas. In total, 70% of the force majeures sent to Vistra from suppliers affected gas deliveries before ERCOT's first power cut. Refineries, petrochemical plants and gas export facilities began showing natural gas supply problems around this time, TCEQ data show.

On the evening of Feb. 12, Christi Craddick, the chairman of the Texas Railroad Commission, the state's oil and gas regulator, held an emergency meeting. They amended the rules to give electricity generation serving "human needs" higher priority than industrial users. The move was necessary, but for many power producers it came too late.

By Sunday Feb. 14, the cold weather spread across the southern U.S. Natural gas hit $300 per million British thermal units in Texas, about 100 times regular levels, and a record $600 in Oklahoma. Traders began drawing comparisons to the records set on the Midwest grid in 1998, and to the California energy crisis that caused widespread blackouts in the early 2000s.

It was only on Monday, Feb. 15, that the first ERCOT power cuts came into effect.

Vast Excess to Supply Crunch

Texas usually produces far more gas than it can handle. It became infamous during the shale boom for releasing vast quantities of natural gas into the atmosphere, a practice known as flaring.

That's what makes February's gas supply crunch all the more remarkable. Usually, gas is cheap in Texas and trades up and down by cents on the dollar each day. Power providers secure the fuel through a mixture of contracted supplies of physical gas and financial contracts like swaps and hedges. Gas utilities are more reliant on more volatile spot prices.

But as gas production tumbled and providers canceled contracts, power companies were losing supplies by the hour. That forced them into the spot market, handing sellers the power to charge almost any price they wanted, according to power executives, who spoke on the condition of anonymity. They scrambled to find replacement supplies at prices trading at the 9,000 a megawatt-hour price cap for days.

The executives expressed dismay that gas producers can shut-in wells and sellers can effectively pull out of contracts without penalty, while power generators have a public duty to keep the lights on -- or at least try to.

The Texas Oil & Gas Association defended the long-term availability of gas, saying, "With proper planning, Texas has ample natural gas to meet our energy needs even during extreme circumstances."

Pipeline Profits

The impact of gas shortages on skyrocketing prices was compounded by Texas's pipeline system, which is controlled by just a few key players -- among them Energy Transfer and Kinder Morgan, the same companies that made the biggest-known profits from the freeze.

Energy Transfer and Kinder Morgan both pointed to their ability to draw gas from their storage facilities as a reason why they were able to supply gas when others providers had none. Energy Transfer said its peak draw was enough to power 3 million homes.

The U.S. has the most interconnected gas network in the world. Interstate pipelines are federally regulated, have transparent pricing and customers can view physical flows at multiple points. By contrast, intrastate pipelines have long been a black box to customers in Texas. They have no public price disclosures, and are only lightly regulated by Craddick's Railroad Commission.

Usually, given how cheap gas is, this isn't a problem. But during the Texas freeze, the market went haywire. One power executive described finding gas at a major hub trading at about $50 per million British thermal units. But once marketers charged delivery costs through the intrastate pipeline, the

total price ended up six times higher. Another executive described how gas put into storage at $2 to $3 per million British thermal units was being offered for sale in the $200 to $300 range.

Winners and Losers

Texas freeze was a bounty for gas trading while utilities paid the price

Gains/losses from Winter Storm Uri (includes both gas and electricity)

Source: Company filings, *Citigroup estimate

Furthermore, intrastate pipeline operators are not required to publish physical flows, putting customers at a massive disadvantage when it came to setting prices.

“If you’re producing half as much gas as normal but selling at 70 to 100 times the price, then that math is working for you,” said one executive who declined to be named. “You just had the greatest week in the history of the gas market.”

CPS Energy, the biggest utility in San Antonio, was blunt in its assessment.

“Egregious natural price gouging,” CEO Paula Gold-Williams said of Energy Transfer, the biggest winner to date. CPS claims the pipeline operator generated two years’ worth of profits in the first quarter of 2021 and is suing to reclaim some of the $1 billion it lost during the storm.

In an emailed statement, Energy Transfer co-CEO Tom Long rejected CPS’s characterization. “They are trying to divert the spotlight from their reckless and incompetent actions in order to avoid paying their bills,” he said. Long cited what he called “miscalculations of the severity of the storm and their lack of competent planning,” saying his company provided natural gas and electricity “at the prevailing market prices.”

CPS’s chief financial officer, chief operating officer and legal staff have all announced their departures from the utility since the storm.

“These unlawful profits will come from the pockets of everyday San Antonians and Texans unless we do something about it,” Gold Williams said. Lawsuits related to the freeze now number in the

hundreds.

Whether to Winterize

Fixing Texas's power grid is dependent on lawmakers in Austin, who just wrapped their session. They passed a series of reforms designed to address the calamity with much of the focus on winterizing power plants and allowing utilities to securitize excess costs by selling bonds. Simple fixes like adding gas producers to the list of critical infrastructure that should not have their power cut off were also passed.

But the bigger question is how much new equipment should be installed to prevent freezing. The gas industry successfully lobbied hard against mandates that would require all of its facilities to weatherize, saying that it would be costly and could threaten their economic viability. The industry claims that the vast majority of its production, about 80%, isn't used for power generation.

Power generators want more. They say the whole gas system from wells to lines should be required to weatherize, to prevent the risk of future blackouts.

"At least a quarter of the blackouts could have been averted if the fuel supply had held up," said Daniel Cohan, associate professor of environmental engineering at Rice University in Houston. "If we only winterize gas power plants without winterizing gas supply, my fear is we're going to have inadequate fuel supply in the future."

Holly Ferguson, whose mother died of hypothermia during the freeze, faults not just the assisted living facility for not having enough generators, but also the energy companies for their failures leading to the disaster.

"People died," she said. "And even though gas companies made billions of dollars, they still don't want to weatherize, and it's infuriating."

– *With assistance by Sergio Chapa, and Gerson Freitas Jr*

$11 billion in 9 days—Texas' natural gas sellers cashed in on deep freeze

State's gas supplies halved during cold snap, but sellers made record profits.

TIM DE CHANT - 7/12/2021, 7:49 PM

Enlarge / **A warning sign for an underground natural gas pipeline stands near Sunray, Texas.**

While Texans froze and natural gas-fired power plants tripped offline during a February cold snap, natural gas traders and pipeline companies made up to $11 billion in just nine days. The handsome profits came thanks in part to a system that left utilities and customers dependent on the state's lightly regulated natural gas market, which some are comparing to a black box.

Texas' grid collapsed in the early morning hours of February 15. The incident was caused largely by coal, natural gas, and nuclear power plants that failed due to equipment that was not prepared for the frigid temperatures. Equipment problems at gas power plants were compounded by a lack of supplies. In the days leading up to

FURTHER READING
Texas gov knew of natural gas shortages days before blackout, blamed wind anyway

the blackouts, the chair of the Public Utility Commission of Texas spoke with the governor's office 32 times about natural gas curtailments caused by a shortage of supplies.

Early gas shortages may have been more severe than previously known, according to a new report by BloombergNEF. In the six days before the outages began, daily Texas gas production dropped by nearly 6 billion cubic feet, almost a quarter of the state's total. That was due in part to producers shutting down wells in advance of the cold weather. Producers' equipment may not have been winterized, either, and fracking requires massive amounts of water, which can freeze pipes and wells. After the blackouts began, gas production dropped another 5 billion cubic feet over the next several days as wells still operating lost power. By the end of the blackouts, almost half of the state's natural gas production was offline.

Gas providers canceled their contracts with utilities and power producers, which had to turn to the volatile spot market to make up the shortfall. As gas supplies tightened, traders and pipeline companies could charge "almost any price they wanted," power executives told Bloomberg.

Major players

Two major players in the Texas gas pipeline system reaped substantial windfalls from the disaster. Energy Transfer Partners reported record earnings for the first quarter, securing a profit of $3.29 billion compared with an $855 million loss for the same quarter in 2020. Kinder Morgan, another large gas seller in Texas, made $1.41 billion in the first quarter this year compared with a loss of $306 million in the first quarter of 2020. We've reached out to both companies for comment and will update this story if we hear back.

One utility, CPS Energy, is blaming Energy Transfer for its woes. The company's CEO, Paula Gold Williams, has said the pipeline company engaged in "blatant unlawful price gouging" and used the cold snap to "generate more than two years' worth of profits from intrastate gas sales in just the first quarter of 2021." CPS is suing Energy Transfer to recoup a portion of the $1 billion it lost during the storm. In a statement to Bloomberg, Energy Transfer co-CEO Tom Long blamed the utility's "miscalculations of the severity of the storm and their lack of competent planning."

If spot prices hadn't spiked, gas suppliers would have shared in the pain when producers began shutting down wells. But the spot market's high prices more than made up for the issues. "If you're producing half as much gas as normal but selling at 70 to 100 times the price, then that math is working for you," one anonymous executive told Bloomberg. "You just had the greatest week in the history of the gas market."

Furthermore, Texas' lightly regulated gas industry doesn't require public price disclosures, which meant that buyers like power companies and utilities didn't know whether the deals they were getting were reasonable.

Before the cold snap, natural gas in Texas had been trading at around $3 per million BTUs. During the cold snap, one executive discovered a major hub selling gas at $50 per million BTUs, already nearly 17 times the normal price. By the time the gas made its way through Texas' pipeline system and companies marked the product up, it sold for up to $300 per million BTUs, a whopping 100-fold premium over typical prices.

FURTHER READING
Minnesotans furious that they have to pay for Texas' deep-freeze problems

Ratepayers across the country, and in Texas in particular, will be paying for the surge in natural gas prices for years. Texas' legislature has proposed a multi-billion-dollar bailout for utilities that paid exorbitant prices for natural gas and generating capacity. In other states like Minnesota, where spot market prices also surged, customers are on the hook for hundreds of millions of dollars since utilities can pass on the additional costs.

Much of the misery caused by the blackouts could have been avoided if gas producers and power plants had winterized their equipment. "At least a quarter of the blackouts could have been averted if the fuel supply had held up," Daniel Cohan, associate professor of environmental engineering at Rice University in Houston, told Bloomberg. "If we only winterize gas power plants without winterizing gas supply, my fear is we're going to have inadequate fuel supply in the future."