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Beyond Texas

Evaluating Customer Exposure to Energy Price Spikes: A Case Study of Winter Storm Uri, February 2021

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About this Paper

In February 2021, a large portion of the United States was impacted by Winter Storm Uri which brought snow, ice, and punishing cold to the center of the country, triggering electricity and natural gas price spikes across a number of states. The public narrative after Winter Storm Uri has generally been "customers receive exorbitant bills due to unscrupulous retail energy companies charging excessive prices". The implication being that residential consumers directly bore the costs associated with the high energy prices because of retail competition and that this would never happen under a regulated monopoly construct. However, looking a level deeper demonstrates that very few residential customers served by competitive suppliers experienced increased energy bills due to the storm, and that, in the vast majority of cases, competitive suppliers, and not their customers, absorbed the prices thereby losing hundreds of millions of dollars. On the other hand, customers being served under a regulated utility construct are not protected from the storm's financial impacts and will in fact, be paying the costs associated with the storm for many years to come.

About the Authors

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Table of Contents

I. Executive Summary

In February 2021, a large portion of the United States was impacted by Winter Storm Uri[1] which brought snow, ice, and punishing cold to the center of the country, including states that rarely see such extremes. As natural gas infrastructure froze, the storm resulted in acute fuel price spikes for regulated monopoly natural gas and electric utilities as well as competitive retail energy suppliers. Natural gas expenditures ran tens of billions of dollars above usual—for not even a week's supply of the commodity. Few companies of any kind were fully hedged against this event. Numerous energy companies in at least 15 states sustained massive financial losses as a result.

During the storm, the price of natural gas increased to as much as 628 times normal in the worst-affected trading hub in Oklahoma.[2] This drove a surge in wholesale electricity prices as well, since the sector increasingly depends on natural gas to generate electricity. Unlike the natural gas market, prices in wholesale electricity markets are capped by regulation. In the Electric Reliability Council of Texas (ERCOT) market, prices remained at the $9,000 per megawatt-hour ("MWh") price cap for days, about 415 times normal pricing levels.[3] To put that in perspective, if these prices were passed on directly to a residential customer for a single day their February commodity bill for gas would increase from $3.80 per day to $2,386.40 per day[4] and their commodity bill for power would increase from $0.74 per day to $308.44 per day.[5]

During and after the Winter Storm, news coverage of ratepayer impacts tended to focus on Texas for two reasons. First, the state's electrically isolated ERCOT market was the epicenter of power outages. Second, a small segment of residential customers in Texas had signed up for rate plans that linked their bills directly to the surging wholesale market. The fact that less than 1% of ERCOT residential customers comprised this segment did not deter the headlines. In truth, however, most Texas residential customers were served through competitive fixed-rate contracts that automatically "insured" them against Uri price spikes. As a result, the brunt of surging prices caused by Uri was borne not by customers but by the retail suppliers that served these customers or their wholesale suppliers. Shareholders ultimately bore that risk, and many suffered huge losses. In addition, competition among retail suppliers has, thus far, prevented retailers from increasing prices for the purpose of recouping past losses.

[1] There were two winter storms that hit back-to-back, the first became known as Winter Storm Uri from Feb 13-17 and the second from Feb 15-20 became known as Winter Storm Viola. For convenience and to stay consistent with common public references, we refer to the whole event as Winter Storm Uri.

[2] Daily gas prices for OneOK rose to $1,193/MMBtu compared to an average of $1.85/MMBtu for the previous three Februaries.

[3] This multiple is derived by dividing the ERCOT cap price of $9 per kWh during Winter Storm Uri by the average of ERCOT LMP at the Houston Zone for the three past February periods prior to 2021.

[4] Assumes residential customer uses 2 Mcf per day with an EIA conversion factor to MMBtu of 1.037. https://www.eia.gov/tools/faqs/faq.php?id=45&t=8#:~:text=One%20thousand%20cubic%20feet%20(Mcf,1.037%20MMBtu%2C%20or%2010.37%20therms.

[5] Assumes residential customer uses 959 kWh per month.

In contrast, customers in nearly every other affected state will eventually pay all or nearly all costs associated with the storm. That is because these customers are part of a captive base of consumers fixed to a particular monopoly utility's service territory. As this report explores, the recovery of fuel price spikes from these customers largely has been treated as a given. Unlike the competitive retail market, where fixed-rate contracts prevent the subsequent collection of unexpected losses, utilities have applied for and are expected to receive cost recovery for all their losses (sometimes even including a profit margin). The consequence is that, with few or no exceptions, utility-monopolies will experience essentially no financial consequence due to the winter storm's fuel price shocks.

Table 1: Total Winter Storm Uri Cost Recovery Requested by Utility-Monopolies by State

State	Number of Utilities Seeking Cost Recovery	Total Known Cost Recovery Requested * (in $ millions)	Cost Recovery Source	Estimated Cost Recovery per Residential Customer - Power * (in $)	Estimated Cost Recovery per Residential Customer - Gas * (in $)
Arkansas	10	$374	Utility Ratepayers	$106	No figures to Report
Colorado	6	$788	Utility Ratepayers	$76	$355
Iowa	1	$1	Utility Ratepayers	No figures to Report	$161
Illinois	3	Figures Unavailable	Utility Ratepayers	No figures to Report	Figures Unavailable
Kansas	11	$1,012	Utility Ratepayers	$130	$584
Louisiana	2	$205	Utility Ratepayers	$14	No figures to Report
Minnesota	4	$771	Utility Ratepayers	No figures to Report	$310
Missouri	2	$203	Utility Ratepayers	$1,104	$594
Mississippi	1	$45	Utility Ratepayers	$22	No figures to Report
North Dakota	3	$46	Utility Ratepayers	No figures to Report	$124
Nebraska	2	$112	Utility Ratepayers	No figures to Report	$368
New Mexico	5	$177	Utility Ratepayers	$22	$170
Oklahoma	7	$3,130	Utility Ratepayers	$849	$1,270
South Dakota	1	$15	Utility Ratepayers	$95	No figures to Report
Texas - Regulated Utilities**	10	$7,613	Utility Ratepayers	$373	$450
*Texas - ERCOT Securitization (HB 4492) ****	*Figures Unavailable*	$2,100	*All ERCOT Customers*	$72	
Total without ERCOT HB4492	**67**	**$14,491**			
Total with ERCOT HB4492		**$16,591**			

***** *Estimates derived using the best available data at the time of report draft. Actual final values for total recovery by state and recovery share by residential customer will vary depending on outcomes of ongoing regulatory and/or legislative processes.*

*** See Table 2 for further detail on the cost recovery requests from regulated Texas utilities.*

*** *ERCOT HB 4492 securitization will be recovered from customers of both utility and competitive supply companies that do not opt out of the securitization mechanism.*

As of this writing, we have identified 67 utilities seeking storm related recovery of at least $14.5 billion[6] of principal alone, to be paid by ratepayers, with residential customers paying an estimated 58% of that total. These utility-monopolies seek not only to recoup losses at their customers' expense, but, in at least some cases, also to charge their rate of return on the losses until they have been recovered, thereby transforming what in a competitive industry would constitute massive financial losses into a profit center.

Meanwhile, although Texas has come to be identified with a fully competitive energy market, it is not. On the contrary, the natural gas utility sector for residential customers in Texas consists entirely of utility-monopolies. These entities have applied to their regulator to recover all their extraordinary costs. Additionally, Texans living in Austin, San Antonio, certain other cities and in rural areas have no choice in electricity provider. The losses the municipal and co-operative utilities experienced during the event also will be entirely recovered from their fixed base of consumers, with the possible exception of Brazos Electric Co-operative, which through bankruptcy is seeking to discharge some of its debts.

Table 2: Winter Storm Uri Cost Recovery Requested by Texas Utility-Monopolies

Utility-Monopolies	State	Commodity	Requested Cost Recovery (in $ millions)	Recovery Source
Brazos Electric Coop	TX	Power	$2,100	Ratepayers/Creditors
Atmos Energy	TX	Gas	$1,466	Ratepayers
CenterPoint Energy	TX	Gas	$1,141	Ratepayers
CPS Energy	TX	Power	$1,000	Ratepayers
Rayburn Country Electric Cooperative Inc	TX	Power	$641	Ratepayers
Lower Colorado River Authority	TX	Power	$380	Ratepayers
SWEPCO (AEP)	TX	Power	$375	Ratepayers
Southwestern Public Service (Xcel Energy)	TX	Power	$76	Ratepayers
Texas Gas Service (One Gas Inc)	TX	Gas	$280	Ratepayers
Entergy Texas Inc.	TX	Power	$155	Ratepayers
Total			**$7,613**	

[6] Not all utilities seeking relief identified the amounts sought. As such, the $14.491 billion is a conservative estimate of the minimum that will be recovered from customers.

Very limited avenues are available to competitive suppliers to recoup past losses. In Texas, the state legislature authorized ERCOT, the operator of the electric grid covering vast majority of the state, to obtain a securitization of $2.1 billion for costs related to ancillary services and uplift costs during Winter Storm Uri. Proceeds of this financing may be claimed by all load-serving entities, including both regulated and competitive suppliers. Even assuming some of these costs, as well as the costs of wholesale-indexed and variable-rate retail products, are passed to residential customers, the comparison between competitive and utility-monopoly markets is stark. Competitive supply customers will pay far less Winter Storm Uri related costs on average than utility-monopoly customers will. ***Table 3*** below compares the average cost impact of Winter Storm Uri on competitive supply customers in Texas versus utility-monopoly customers in Texas and other impacted states.

Table 3: Average Uri Costs Incurred per Residential Customer

Entity Type	Average Impact of Winter Storm Uri per Residential Customer
Power Competitive Suppliers - Texas	$86 [7]
Power Utility Monopolies - Texas	$373
Gas Utility Monopolies - Texas	$450
Power Utility-Monopolies - All Uri Impacted States	$326
Gas Utility-Monopolies - All Uri Impacted States	$381

II. Fuel Price Spikes During Severe Weather

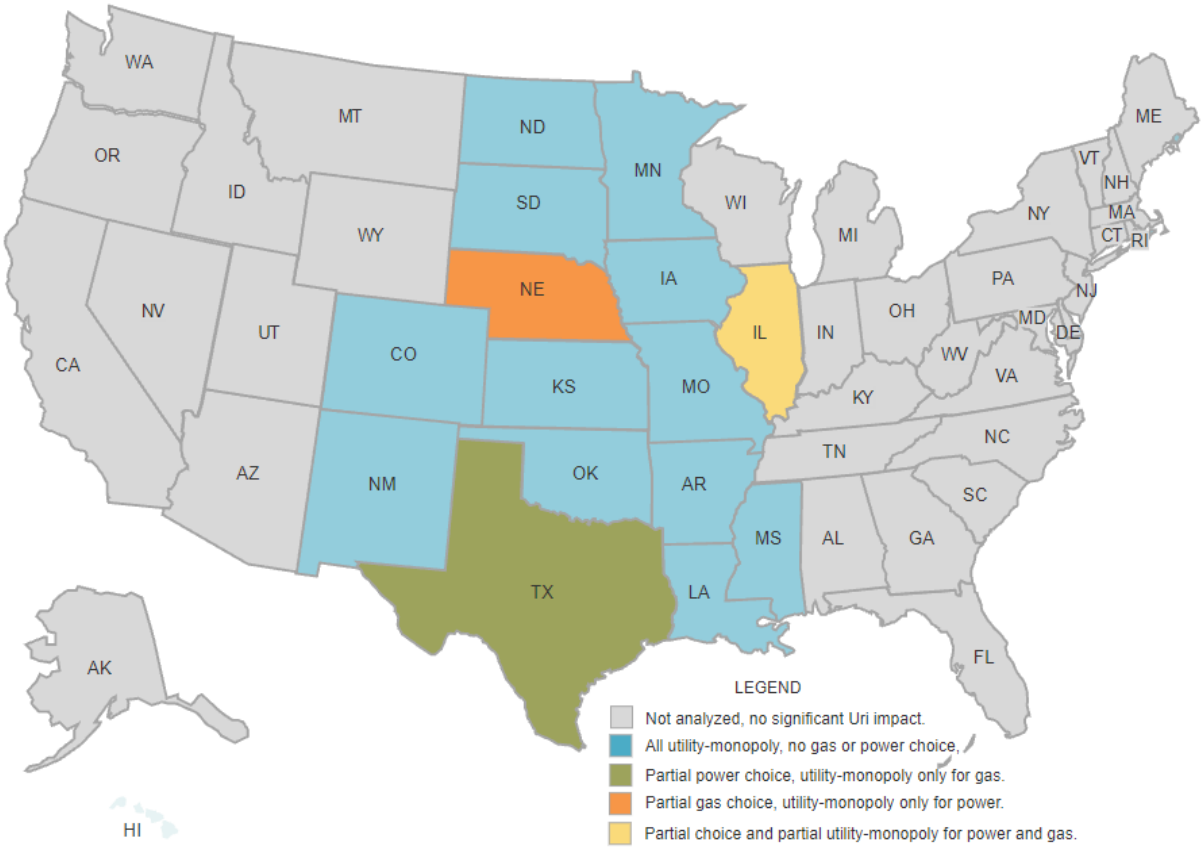
The severe weather of Winter Storm Uri caused a decline in natural gas production, as well as a decrease in electric generation, even as customer demand rose dramatically, resulting in very high wholesale prices in both these markets throughout a 15-state region. Certain utility executives and others have ascribed the financial consequences of Winter Storm Uri to electricity competition policy. The reality is that 12 out of the 15 states that experienced the most significant

[7] This value is derived by adding the $72 residential customers are expected to pay for ERCOT Securitization HB 4492 plus cost increases residential customers already paid in February 2021 above and beyond what they normally paid in the last three Februaries prior to the storm. The derivation of this additional amount (approximately $14 per customer) is discussed later in this paper.

power and natural gas wholesale price spikes from the storm do not allow power and natural gas competition at all. We found no evidence that the presence of a competitive retail energy market caused the extreme wholesale energy prices related to Uri. As discussed in the following sections, the existence of retail competition versus a utility-monopoly affects how extreme wholesale costs are recovered—with captive customers of monopolies bearing many of them, while customers with choice either were insulated by fixed rates or can "shop away" from the effects. In any case, the structure of the retail market did not cause natural gas wholesale price spikes, which were ubiquitous throughout the region, regardless of electricity policy choices a state had made.

The 15 states our analysis identified that experienced the most significant power and natural gas price spikes from Winter Storm Uri are shown in ***Figure 1*** below.

Figure 1 - States with Most Significant Wholesale Price Impacts



While power prices during the storm received the most press attention, constriction in gas supply was an underappreciated driver of the events seen in the power sector. Analysis from Bloomberg summarizes the key events leading up to the dramatic increase in gas prices:

> Natural gas production in the state of Texas dropped by 11 billion cubic feet from February 9th to the 16th. 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.[8]

Issues with natural gas supply—52% of power is generated with natural gas in Texas[9]—contributed to high power prices and ultimately widespread blackouts in Texas. The root cause of high prices and blackouts was lack of physical energy supply and not the existence of retail competition. Indeed, competitive power generators in Texas performed better than fully regulated utility power plants in ERCOT during Winter Storm Uri.[10]

Impact on Natural Gas Prices

The impact on natural gas prices were felt from Texas to Chicago and even New York. The most pronounced impacts were in Oklahoma and Texas. ***Table 4*** below summarizes a typical February compared to February 2021 prices. The most extreme spot gas prices were at the OneOK trading point in Oklahoma, which saw peak prices rise to 628 times normal and average prices to 244 times normal. The second-highest prices were in the Houston Ship Channel in Texas with peak prices 168 times normal and average prices 81 times normal. The Chicago and New York increases were more modest but show just how widespread the impacts of Winter Storm Uri were felt.

Table 4 - Wholesale Natural Gas Prices[11]

Location	State	Typical Price ($/MMBtu)[12]	Average Price Feb 12- Feb 19 ($/MMBtu)	Peak Price Feb 12 – Feb 19 ($/MMBtu)
Transco Zone 6 NY	New York	$2.49	$9	$15
Henry Hub	Louisiana	$2.41	$10	$24
Chicago City Gate	Illinois	$2.32	$72	$130

[8] https://www.bnnbloomberg.ca/gas-sellers-reaped-11-billion-windfall-during-texas-freeze-1.1627219#:~:text=Gas%20Sellers%20Reaped%20%2411%20Billion%20Windfall%20During%20Texas,McKinney%2C%20Texas%2C%20U.S.%2C%20on%20Tuesday%2C%20Feb.%2016%2C%202021

[9] Derived using EIA Table 54.1. Electric Power Projections by Electricity Market Module Region

[10] https://www.rstreet.org/2021/06/28/surprise-competitive-generation-outperformed-regulated-monopolies-during-the-texas-winter-storm/

[11] Daily gas pricing data obtained from Natural Gas Intelligence.

[12] Typical prices derived by averaging the February prices from the previous three years.

Waha	Texas	$1.43	$113	$209
Houston Ship Channel	Texas	$2.38	$193	$400
OneOK	Oklahoma	$1.90	$463	$1,193

Impact on Power Prices

ERCOT, the organization that operates the energy market and transmission system for most of Texas, has a cap on the wholesale spot price of power at $9,000/MWh. In the past, the market has only reached this cap for a handful of hours and never for 24 hours/day for successive days. But during Winter Storm Uri, ERCOT prices held at or near the $9,000/MWh ERCOT price cap for approximately 76 hours in Houston and 94 hours in Dallas from February 15 to the morning of February 19.[13] To put this in perspective, the ERCOT Houston zone price during Uri was approximately 415 times the typical price for February. Wholesale power prices also climbed in other states as well. For example, the average price in Chicago during Winter Storm Uri was 3.4 times the normal February; in central Illinois it was 4.4 times normal.

Table 5 – Wholesale Power Prices[14]

Pricing Location	Typical Price ($/MWh)	Average Price Feb 2021 ($/MWh)	Average Price Feb 12 - Feb 19 ($/MWh)	Peak Price Feb 2021 ($/MWh)
ERCOT Houston	$22	$1,515	$5,200	$9,235[15]
ERCOT North	$22	$1,536	$5,263	$9,317[15]
PJM ComEd	$23	$40	$78	$309
MISO Ameren CIPS	$23	$47	$102	$672

Again, these extreme prices occurred because of a lack of physical power supply as the result of the storm disrupting the production of power and natural gas and not because customers in parts of Texas have the choice to buy their electricity from competitive energy companies. We did not examine whether these extreme prices were fair and reasonable; this is a topic of much debate and litigation.[16] Rather, we focused on if and to what extent these extreme prices made their way to residential customers.

[13] https://www.spglobal.com/platts/en/market-insights/latest-news/natural-gas/021621-texas-regulators-keep-prices-near-9000mwh-cap-during-rotating-outages

[14] Not all the impacted areas of the storm fall under the jurisdiction of an RTO to establish a clear wholesale market price. As such, we only list applicable service areas in ERCOT, PJM and MISO in the table.

[15] Although these figures are above the ERCOT $9,000 per MWh cap, they were posted by ERCOT as actuals.

[16] Gas Sellers Reaped $11 Billion Windfall During Texas Freeze, Bloomberg, July 9, 2021.

III. Utility-Monopoly Cost Recovery Mechanisms

The Utility-Monopoly Paradigm

Utility-monopoly service areas are those where customers can only buy their electricity and natural gas from vertically integrated utility-monopolies, regulated by the state. These utility-monopolies provide both the commodity and delivery of electricity or natural gas to their customers along with related invoicing and customer support. Utility-monopolies usually are permitted to pass through all energy costs to their ratepayers. Utility-monopolies set energy rates that estimate future costs plus or minus a reconciliation for past expenses that still need to be recovered. In the case of the extraordinary energy supply costs in February 2021, one of the three accounting mechanisms discussed in the ***Table 6*** below typically was used by utility-monopolies.

Table 6 – Utility-monopoly Accounting Mechanisms

Accounting Mechanism	Description
Tracker	Utility-monopolies are typically regulated on a "cost-of-service" basis, where all prudently incurred costs, including a return when utilities commit capital, are recovered from a captive set of customers. For fuel costs, nearly all utilities in recent decades are permitted to use a formula or "tracker" to recover these costs from customers on a current basis.
Deferred Accounting	For particularly extraordinary costs, utilities also employ deferred accounting—an exceptional practice available only to monopolies that allows utilities to obtain an "accounting order" from a regulator to record a "regulatory asset" that offsets extreme costs.
Securitization	Financing that allows utilities to confer a property right to bondholders for future dedicated revenue from a captive customer base, with proceeds from bond issuances flowing to the utility to reimburse it for exceptional costs.

In the aftermath of Winter Storm Uri, utilities have used all these mechanisms. Although the three are different, they all ensure that *future* customers will pay for a utility's past losses on fuel costs. Utility-monopolies have been clear to their shareholders that they expect one or another regulatory treatment will be applied in a way that makes them whole. As an executive of CenterPoint Energy put it in its Q1 2021 earnings call:

> First, we delivered very strong results for the first quarter of 2021, including $0.47 of utility EPS. Because the **higher natural gas prices are pass-through costs for our business, they did not impact this quarter's utility results** (emphasis added) … We are off to a great start for the year, so let's check the utility earnings box as being on track.[17]

Like any business that buys large quantities of fuel or electricity—whether a utility-monopoly, a large customer, a competitive retail energy supplier, or an LNG exporter—a utility must decide whether to hedge its supply obligation through forward physical or financial purchases of the commodity. Unlike those other businesses, however, utilities usually pay little or no price if those hedging strategies fail. Winter Storm Uri represents an example of this, where regulated utilities are seeking to recoup all costs associated with the storm plus interest in most cases. Certain proceedings before state public utility commissions have emerged to question the utility's procurement actions, but even the most substantial requests to disallow utility expenditure would still reimburse most of the utility's extraordinary costs at the expense of customers. Typically, a utility-monopoly's request to raise rates for fuel costs in the context of a "tracker" are granted.

Utility-Monopoly Customers Are on the Hook for Winter Storm Uri Related Costs

In the wake of Winter Storm Uri utility-monopolies in affected states are requesting or have already been approved to borrow money to pay their storm related costs, leaving their customers responsible to pay the borrowed money over time. We studied 67 power and natural gas utility-monopolies to determine the additional cost incurred or that will be incurred by their customers because of the storm. A small portion of utility-monopoly customers experienced immediate or near-immediate increases in price. These were primarily customers served by natural gas utility-monopolies that passed the wholesale prices directly to customers in their fuel cost adjustment instead of financing these costs over a future period. For example, all the major natural gas utilities in Illinois imposed a significant increase, as much as 51% from the rates prior to Winter Storm Uri, in their Purchased Gas Adjustment Rate beginning in March and April.[18] We found that all utility-monopoly customers, however, will pay for extraordinary costs from Winter Storm Uri through future price increases. Without exception, utility-monopolies impacted by the storm are now seeking full recovery of all storm-related costs and, in many cases, recovery of financing costs as well.

Recovery dockets that are complete and those that are ongoing suggest that the state commissions will permit full recovery for most utility-monopolies. This would result in customers paying Winter Storm Uri associated costs over months, years, or decades while shareholders of those same utility-monopolies are largely shielded from those costs.

[17] https://www.msn.com/en-us/money/companies/centerpoint-energy-inc-cnp-q1-2021-earnings-call-transcript/ar-BB1gr9jH

[18] https://www.icc.illinois.gov/natural-gas-choice/purchased-gas-adjustment-rates, Nicor Gas Purchased Gas Adjustment Rate increased from $.35/therm in March to $.53/therm in April and has remained there through at least August 2021.

Summary of Recovery Mechanisms

It's clear that the financial losses experienced by many utility-monopolies across the fifteen states we studied were enormous. As summarized in ***Table 1***, we identified approximately $14.5 billion in costs that were incurred by investor-, municipal-, and cooperative- owned electric and gas utility-monopolies during the storm that will be recovered at the expense of customers through the three accounting mechanisms previously discussed. Our analysis found that utility-monopolies opted to recover Winter Storm Uri related costs via tracker in the form of fuel cost adjustment increases when extraordinary costs were relatively low and via a deferred accounting or securitization where costs were relatively high. In either case, however, utility-monopoly shareholders are or will be made whole at the expense of utility-monopoly customers.

Fuel Cost Recovery

Most natural gas utility-monopolies pass on their cost associated with purchasing natural gas directly to the consumer through fuel cost adjustments. One example are the utilities in Illinois that we discussed in the previous section. Each of the three major gas utilities in Illinois – Nicor Gas, North Shore Gas and Peoples Gas -- had significant increases in their "purchased gas adjustment" rate to recover costs associated with Uri. In these cases, customers did not pay for the costs associated with Uri immediately but on a slight delay – beginning in April 2021 instead of February 2021. However, customers will pay 100 percent of the costs associated with Winter Storm Uri.

Figure 2 - Illinois Utility Purchased Gas Adjustment[19]

Nicor Gas Historical Natural Gas Cost Rates per therm

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2021	$0.2900	$0.3000	$0.3500	$0.5300	$0.5300	$0.5300	$0.5300					
2020	$0.2600	$0.2600	$0.2600	$0.2600	$0.2600	$0.2600	$0.2400	$0.2400	$0.2600	$0.2800	$0.2800	$0.2900
2019	$0.3600	$0.3600	$0.3600	$0.3700	$0.3700	$0.3700	$0.3500	$0.3300	$0.3100	$0.2900	$0.2700	$0.2700
2018	$0.3200	$0.3200	$0.3200	$0.3200	$0.3600	$0.3600	$0.3800	$0.3800	$0.3800	$0.3700	$0.3600	$0.3600
2017	$0.4200	$0.4100	$0.3900	$0.3900	$0.4100	$0.4300	$0.3700	$0.3500	$0.3300	$0.3300	$0.3300	$0.3300

Some utilities extended the normal fuel cost recovery mechanism to spread the costs associated with Winter Storm Uri over a longer period to lessen the monthly impact to customers, thereby changing their recovery mechanism from tracker to deferred accounting. But in either case, the utilities were fully compensated for their costs associated with Winter Storm Uri.

[19] https://www.icc.illinois.gov/natural-gas-choice/purchased-gas-adjustment-rates

Finance Mechanisms

For the utility-monopolies that did not use a fuel cost adjustment to recover the impact of higher wholesale prices, a financing mechanism is used to enable them to borrow the money and have their customers repay it over time. These mechanisms vary in their term and interest rates depending on the state and utility-monopoly. For large, unexpected events such as Winter Storm Uri, a common method of financing is "securitization". This typically requires the issuance of legislation or a utility commission order allowing a utility-monopoly to structure the debt such that it receives a strong credit rating and thus reduces the cost of financing. The future revenue from the rate increase to the customer is pledged against the debt to provide creditor assurance it will be repaid.

Oklahoma utilities racked up some of the most significant extraordinary costs during Winter Storm Uri, outpacing many states including Texas in terms of the dollar amount each residential customer will be charged because of the storm.

Table 7 – Estimated Share of Recovery per Residential Customer: Oklahoma v Texas

State	Estimated Share of Recovery per Residential Customer Power * (in $)	Estimated Share of Recovery per Residential Customer Gas * (in $)
Oklahoma	$849	$1,270
Texas - Regulated Utilities	$373	$450

***** *Estimates derived using the best available data at the time of report draft. Actual final values for total recovery by state and recovery share by residential customer will vary depending on outcomes of ongoing regulatory and/or legislative processes*

Texas, Oklahoma[20] and other states have provided paths for their utility-monopolies to securitize their debts associated with Winter Storm Uri. In Texas, this has been enabled through SB 1580 and HB 1520. SB 1580[21] provides support for electric cooperatives in Texas that face substantial losses in the wake of Uri by securitizing their losses. The most prominent of these is Brazos Electric Coop who filed for bankruptcy in the face of $2.1 billion in Uri related costs. SB 1580 allows the co-op to issue multi-decade securitization bonds to be repaid through non-bypassable "securitization charges" by all the co-op's customers. HB 1520[22] enables gas utilities to recover costs they may incur to secure gas supply and provide service during natural and man-made

[20] http://www.oklegislature.gov/BillInfo.aspx?Bill=SB%201050&Session=2100
[21] https://capitol.texas.gov/tlodocs/87R/billtext/html/SB01580F.htm
[22] https://capitol.texas.gov/reports/report.aspx?LegSess=87R&ID=author&Code=A2515

disasters, system failures, and other catastrophic events over an extended period through non-bypassable charges.

Utility-Monopoly "Fixed Rates"

Even when utility-monopolies are "innovative" and provide options to customers for something other than a direct pass-through of wholesale prices, they still seek to recover their losses from such products. For example, Oklahoma Gas & Electric offers customer "price security" by fixing the customers cost per month with their Guaranteed Flat Bill offering. But in their request for relief, they list their $30 million loss from this product as part of what they want to recover from customers instead of shareholders. This is a stark contrast to competitive energy suppliers whose shareholders take the loss when the company loses money.

Cost Recovery by Utility-Monopoly

Table 8 provides a sampling of utility-monopolies that incurred costs associated with Winter Storm Uri. In every case we found the utility proposed full cost recovery so that their shareholders remain fully protected while their customers remain on the hook for their entire bill.

Table 8 –Utility- Monopoly Winter Storm Uri Requested Cost Recovery

Utility-Monopolies	State	Commodity	Requested Cost Recovery (in $ millions)	Cost Recovery Source	Cost Recovery Mechanism[23]
Brazos Electric Coop	TX	Power	$2,100	Ratepayers/Creditors	Securitization
Atmos Energy	TX	Gas	$1,466	Ratepayers	Securitization
CenterPoint Energy	TX	Gas	$1,141	Ratepayers	Securitization
CPS Energy	TX	Power	$1,000	Ratepayers	*
Rayburn Country Electric Cooperative Inc	TX	Power	$640.5	Ratepayers	*
Lower Colorado River Authority	TX	Power	$380	Ratepayers	*
SWEPCO (AEP)	TX	Power	$375.0	Ratepayers	*
Southwestern Public Service (Xcel Energy)	TX	Power	$76.0	Ratepayers	Tracker
Texas Gas Service (One Gas Inc)	TX	Gas	$279.6	Ratepayers	Securitization
Entergy Texas Inc.	TX	Power	$155.0	Ratepayers	*
Black Hills	SD	Power	$15.0	Ratepayers	*
Oklahoma Natural Gas	OK	Gas	$1,371.4	Ratepayers	Securitization
OG&E	OK	Power	$1,000.0	Ratepayers	Securitization

[23] Utility accounting has many nuanced mechanisms and applicable vocabulary. For clarity, we have categorized the various mechanisms employed into the three broad categories we described in Table 6, though there may be differences within each category.

Utility-Monopolies	State	Commodity	Requested Cost Recovery (in $ millions)	Cost Recovery Source	Cost Recovery Mechanism[23]
Public Service Co of Oklahoma	OK	Power	$650.0	Ratepayers	Securitization
CenterPoint	OK	Gas	$79.0	Ratepayers	Securitization
Arkansas OK Gas	OK	Gas	$22.0	Ratepayers	Securitization
Liberty-Empire	OK	Power	$6.7	Ratepayers	Securitization
Fort Cobb Fuel Authority	OK	Gas	$0.6	Ratepayers	*
New Mexico Gas Company	NM	Gas	$110.0	Ratepayers	*
Public Service Co of NM	NM	Power	$28.5	Ratepayers	*
Southwestern Public Service Co	NM	Power	$20.0	Ratepayers	*
Zia Gas	NM	Gas	$16.7	Ratepayers	*
El Paso Electric Co	NM	Power	$1.3	Ratepayers	*
Black Hills	NE	Gas	$86.5	Ratepayers	Deferred Accounting
NW Energy	NE	Gas	$25.4	Ratepayers	Deferred Accounting
Xcel	ND	Gas	$32.5	Ratepayers	Tracker
MDU	ND	Gas	$13.5	Ratepayers	*
Entergy Mississippi LLC	MS	Power	$45.0	Ratepayers	*
Empire District Electric Co	MO	Power	$168.7	Ratepayers	Deferred Accounting
Empire Gas	MO	Gas	$33.8	Ratepayers	*
CenterPoint	MN	Gas	$470.0	Ratepayers	Deferred Accounting
Xcel	MN	Gas	$215.0	Ratepayers	*
MERC	MN	Gas	$75.0	Ratepayers	Tracker
Great Plains	MN	Gas	$11.0	Ratepayers	*
Entergy Louisiana LLC	LA	Power	$190.0	Ratepayers	Tracker
Entergy New Orleans, LLC	LA	Power	$15.0	Ratepayers	*
Kansas Gas Service	KS	Gas	$451.7	Ratepayers	Securitization
Evergy Kansas Central, Inc	KS	Power	$153.2	Ratepayers	Deferred Accounting
Southern Pioneer Electric Company	KS	Power	$92.5	Ratepayers	Deferred Accounting
Sunflower Electric	KS	Power	$92.5	Ratepayers	*
Black Hills Gas	KS	Gas	$87.9	Ratepayers	*
Atmos Energy	KS	Gas	$76.7	Ratepayers	*
Evergy Metro	KS	Power	$43.9	Ratepayers	*
Midwest Energy	KS	Gas	$12.0	Ratepayers	*
Eskridge	KS	Gas	$1.2	Ratepayers	*
American Energies	KS	Gas	$0.3	Ratepayers	*

Utility-Monopolies	State	Commodity	Requested Cost Recovery (in $ millions)	Cost Recovery Source	Cost Recovery Mechanism[23]
Empire District Electric Co	KS	Power	*	Ratepayers	*
Nicor Gas	IL	Gas	*	Ratepayers	Tracker
North Shore Gas	IL	Gas	*	Ratepayers	Tracker
Peoples Gas	IL	Gas	*	Ratepayers	Tracker
Liberty	IA	Gas	$1.2	Ratepayers	Deferred Accounting
PUB SERVICE CO OF COLORADO	CO	Gas	$354.1	Ratepayers	Deferred Accounting
Public Service Co of Colorado	CO	Power	$307.1	Ratepayers	Deferred Accounting
Black Hills	CO	Gas	$72.7	Ratepayers	*
Black Hills Colorado Electric, LLC	CO	Power	$23.1	Ratepayers	*
Atmos Energy	CO	Gas	$23.1	Ratepayers	*
Colorado Natural Gas	CO	Gas	$8.2	Ratepayers	*
SWEPCO	AR	Power	$121.0	Ratepayers	Securitization
Entergy Arkansas LLC	AR	Power	$105.0	Ratepayers	Deferred Accounting
AR Elec Coop	AR	Power	$100.0	Ratepayers	*
Carroll Electric Coop Corp - (AR)	AR	Power	$18.0	Ratepayers	*
Ozarks Electric Coop Corp - (AR)	AR	Power	$10.2	Ratepayers	*
Empire District Electric Co	AR	Power	$6.6	Ratepayers	*
North Arkansas Elec Coop, Inc	AR	Power	$6.4	Ratepayers	*
Petit Jean Electric Coop Corp	AR	Power	$3.0	Ratepayers	*
South Central Ark El Coop, Inc	AR	Power	$1.9	Ratepayers	*
Ouachita Electric Coop Corp	AR	Power	$1.7	Ratepayers	Tracker
Brazos Electric Coop	TX	Power	$2,100	Ratepayers/Creditors	Securitization
Total			**$14,491**		

***** *Item is unknown as of this writing*

As ***Table 8*** illustrates, approximately $14.5 billion is being requested by monopoly-utilities to be recovered from monopoly-utility customers. Of that total, we estimate that approximately $8.3 billion or 58% will be recovered from residential customers.[24]

[24] Dollar & percentage figure estimates derived by multiplying the cost per residential customer multiplied by the number of residential customers in each utility.

Where financing via securitization is not available, utility-monopolies typically seek to recover costs through their own direct financing. In either case, it appears that, at least in most cases, the utilities will be able to recover all their costs plus interest. A possible exception may be in Minnesota where the Attorney General has come out strongly against CenterPoint fully recovering their costs. The Attorney General stated:

> Minnesota ratepayers should not reimburse profitable utilities for irresponsible business-as-usual decisions in the face of a well-predicted severe winter storm and corresponding price spike in the natural gas market. Winter Storm Uri was an unprecedented event that led to severe natural gas price increases. The utilities did not cause this weather or its impact on market prices. They are, however, responsible for the actions they took – or failed to take – in response to the storm and the increased market prices it caused … **One reason for these tepid actions appears to be that the utilities believed that they would not have to pay the high commodity prices they were facing, because the costs would be passed on to ratepayers.** (emphasis added)[25]

However, this is just the Attorney General's recommendation. The Minnesota Public Utilities Commission has not yet ruled on the utility-monopoly's request to pass through Uri related costs to their customers, so it is still possible for CenterPoint to receive complete recovery.

We also note that this same utility, CenterPoint Minnesota, originally requested that they not only recover 100% of their costs, but that they get to charge an 8.72% interest rate to customers on top of it, a request they have since pulled back. At a time when customers can refinance their homes at less than 3 or 4%, the utility-monopoly sought, albeit unsuccessfully, to take advantage of the catastrophic event by using cost recovery to earn a solid profit. Other utilities seeking recovery from the storm, however, have been allowed to recover costs plus their normal regulated rate of the return. For example, the Nebraska Public Utility Commission granted NorthWestern Corporation's proposal to fully recover storm related costs plus their allotted rate of return, enabling the company to maintain profit margin even in the wake of financial losses.[26]

IV. Customer Exposure in Competitive Retail Energy Markets

The Competitive Retail Energy Market Paradigm

Energy restructuring in the United States came about to combat the inefficiencies of electric and gas utility-monopolies. The introduction of competition policy was intended to discipline an industry that had shown little urgency to keep consumer prices low, reasonable, or transparent.

[25] Comments of the Office of the Attorney General in Docket No. G-999/CI-21-135, Docket No. G-008/M-21-138, Docket No. G-004/M-21-235 dated July 6, 2021.

[26] See Docket No. NG-111.2, Application No. NG-111/PI-237, ORDER APPROVING RECOVERY PLAN, Entered: May 11, 2021.

Beginning in the 1980s and '90s, legislatures passed laws that segmented vertically integrated utility-monopolies in some states into separate generation, delivery services (distribution and transmission), and retail functions. While delivery services remained a monopoly service, generation and related services became competitive.

Since then, retail energy competition emerged in many U.S. states, giving consumers the option to purchase power and natural gas from a competitive energy supplier that is different from the monopoly utility. When a consumer chooses to buy electricity and/or natural gas from a competitive supplier, the competitive supplier procures the commodity from the wholesale market and/or from their own resources and arranges for its delivery to the consumer's local utility service area. Where the traditional utility-monopoly model would ultimately pass all its wholesale risk to its consumers, this restructured competitive model shifted the risk of the wholesale markets off of consumers and onto the suppliers, who are equipped and motivated to manage it effectively. Winter Storm Uri served as a reminder of how great a risk wholesale markets can sometimes present.

It should be noted that even in states with competition, it is rare for all customers in the state to take service from a competitive supplier. In some cases, competitive options are only permitted for the largest utilities in the market, in others, only for certain customer classes, and is often not permitted in service areas of municipally owned systems or cooperatives.

Competitive Retail Energy Supplier Customers Avoided Winter Storm Uri Related Costs

For the 15 states we analyzed, less than one-third of residential power customers and approximately one-fifth of natural gas customers participate in customer choice. For power, only a portion of the customers in Illinois and Texas have choice and for natural gas only a portion of customers in Illinois and Nebraska have choice. ***Table 9*** below illustrates the number of customers with choice that have switched to a competitive supplier versus utility customers.

Table 9 – Residential Customers with Choice

State	Power Customers Participating in Choice	Power Customers Not Participating in Choice[27]	Gas Customers Participating in Choice[28]	Gas Customers not Participating in Choice[29]
AR	0	1,396,870	0	557,263
CO	0	2,370,164	0	1,813,004
IA	0	1,392,979	0	935,342
IL	1,567,228[30]	3,736,852	287,891[31]	3,651,154
KS	0	1,274,955	0	872,451
LA	0	2,095,466	0	910,369
MN	0	2,446,111	0	1,559,872

[27] https://www.eia.gov/electricity/sales_revenue_price/pdf/table1.pdf
[28] https://www.eia.gov/naturalgas/annual/pdf/table_026.pdf
[29] https://www.eia.gov/dnav/ng/ng_cons_num_a_EPG0_VN3_Count_a.htm
[30] http://pluginillinois.org/
[31] EIA Natural Gas Annual, Table 26 - Number of Consumers Eligible and Participating in a Customer Choice Program in the Residential Sector, 2020

MO	0	2,811,863	0	1,421,619
MS	0	1,293,419	0	465,891
ND	0	385,038	0	148,015
NE	0	855,619	67,700	485,565
NM	0	895,086	0	594,859
OK	0	1,777,156	0	952,938
SD	0	403,717	0	194,067
TX	6,451,123[32]	4,915,516	0	4,786,445
Total	**8,018,351**	**28,050,811**	**355,591**	**19,348,854**

We examined each of these states and found there was no evidence that customers taking service from competitive suppliers in either Illinois or Nebraska experienced any immediate increase in price associated with Winter Storm Uri. In Texas, which garnered most of the jaw dropping headlines such as "$17,000 Electric Bill? A Deregulated Power Grid Leads to Wild Prices for Texans",[33] we estimate that less than one-half of one percent of all residential customers taking service with a competitive retail supplier experienced price increases that reflected the wholesale market spikes. And even for those unfortunate few customers, they will likely never have to pay those bills.[34]

We found no signs that the costs of Winter Storm Uri were being recovered in future price increases for customers in competitive markets. In fact, average supplier prices for a 12-month fixed price contract in Texas decreased slightly over the four months after Winter Storm Uri compared to the four months before the storm. Robust competition among retail suppliers appeared to prevent retailers from recouping past losses in future pricing.

Product Offerings Available to Customers Residing in Competitive Markets

The competitive market provides an array of product and pricing options to residential customers. More broadly, however, competitive offers for residential customers fall into one of three product categories:

- ***Fixed Prices*** – Either the customer's total monthly price is fixed or the price per unit ($/kWh or $/therm)[35] is fixed for the term of the agreement.[36] Where the total monthly cost is fixed, the effective $/kWh or $/therm will go up or down based on the monthly

[32] https://www.eia.gov/electricity/sales_revenue_price/pdf/table6.pdf
[33] https://www.forbes.com/sites/jonathanponciano/2021/02/20/17000-electric-bill-deregulated-power-grid-texas-griddy/?sh=408e7e0258ba
[34] March 16, 2021 Press Release "AG Paxton Ensures Forgiveness of $29 Million in Electric Bills for 24,000 Texans After Suing Griddy Energy, LLC"
[35] Residential gas customers may be measured in different units depending on the utility, we use therms here as a common reference for explanatory purposes.
[36] In the Texas retail competitive market, fixed price products frequently include a pass through, without mark-up, of regulated transmission and distribution utility (TDU) delivery charges. The cost of TDU delivery charges can change multiple times a year due the numerous rider mechanisms TDUs may utilize between major rate cases.

consumption. Where the cost per unit is fixed, the monthly cost will change based on the customer's actual monthly consumption. In either case, the customer is protected against movements in the wholesale market price for the duration of their contract.

- ***Variable Prices*** – The customer's price per unit can change each month based on the supplier's pricing. These plans are either chosen by the customer from the onset, or the customer has automatically been rolled over to a variable price contract when their fixed price term ends. These plans are not directly tied to the wholesale index but can reflect some portion of wholesale market costs.[37]
- ***Wholesale Index Rates*** – The customer's cost will change based on the wholesale market cost. The primary example of this rate was Griddy, who charged the customer $9.99/month as a subscription fee and the cost of energy was based directly on the wholesale market price. Prior to Uri, we are only aware of this type of plan being an option for Texas power customers. Following Uri, these plans have been outlawed in Texas and we are not aware of any supplier offering this option in any other market.

While wholesale index rates attracted all the press in the aftermath of Winter Storm Uri, we estimate that in the competitive market only one-quarter of one percent of residential customers were on these rates. The majority of customers were (and continue to be) on fixed price rates,[38] with a smaller percentage on variable rates.

Impacts of Wholesale Prices on Competitive Retail Markets

We examined how residential customer prices were impacted by the wholesale price increases in the three competitive markets that exist within our 15-state analysis. We began by looking at the residential retail prices in each market to determine if retail prices moved during February and March. Even though Uri was over by February 19, 2021, we examined changes in prices for both February and March combined to determine if some residual impacts on customer prices carried over into March. The results are summarized in **Table 10**. Neither the Nebraska gas market, the Illinois competitive gas market (see further discussion in the next section), nor the Illinois power market showed any appreciable movement in price.

Table 10 – Residential Choice Market Price Increases in February & March 2021[39]

	Illinois Gas All Market ($/MCF)	Illinois Gas Competitive Market Only ($/MCF)	Nebraska Gas ($/MCF)	Illinois Power (cents/kWh)	Texas Power (cents/kWh)
Feb/Mar (Prev 3 Years)	6.92	6.92	6.91	12.84	11.57
Feb/Mar 2021	7.35	6.88	6.96	12.97	12.10

[37] It's worth noting that competitive suppliers may hedge variable price offers just as they do fixed price offers.
[38] Electricity Prices During the 2021 Winter Storm, Prepared by the Public Utility Commission of Texas 2/21/2021.
[39] Gas and power prices obtained from the Energy Information Administration (EIA).

Change (%)	6.2%	-0.6%	0.7%	1.0%	4.7%

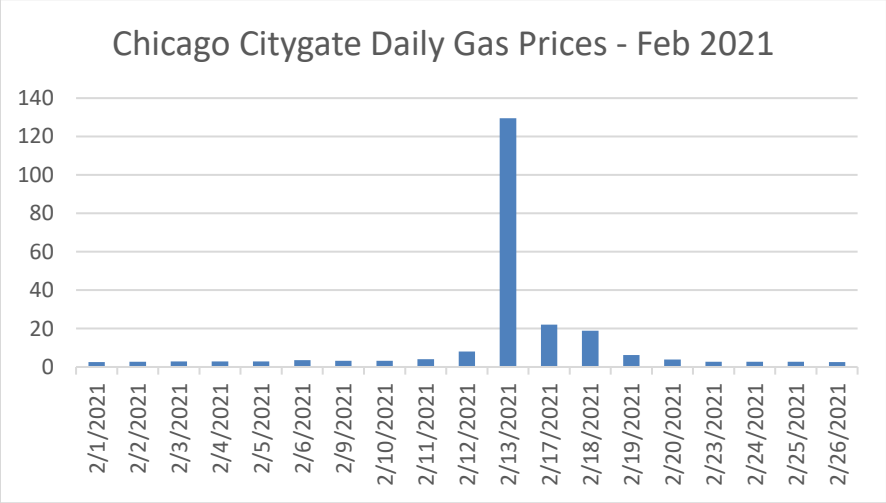
However, Illinois gas prices overall did show an increase of 6.2% while Texas power prices show a 4.7% increase in residential prices.

Based on this retail price data there is no evidence that residential choice customers saw any impact in the price of their natural gas in Nebraska or Illinois, or in their price of power in Illinois. While we could find no data on the percentage of customers in either market that chose fixed price products, it is highly likely that we find no appreciable movement in price because the preponderance of customers in both markets who chose a competitive supplier were protected by choosing a fixed price contract. Since we did see increased residential prices in the overall Illinois natural gas and Texas power markets, we examined these markets further.

Illinois Natural Gas Competitive Market

Wholesale natural gas prices in Chicago[40] rose significantly higher than normal during Uri, rising to $130/MMBtu compared to typical February prices of $2.32/MMBtu. For the period impacted by Winter Storm Uri, if Illinois customers who chose a competitive supplier were to have been exposed to wholesale prices, their costs would have increased 37-fold for the week or nearly 12-fold for the month of February alone. As mentioned earlier, at the retail level we see a 6.2% increase in natural gas prices for Illinois. Next, we examined what portion of this price increase was related to ratepayers of the utility-monopolies versus customers of competitive suppliers.

Figure 2 – Chicago Citygate Daily Spot Prices



[40] Chicago wholesale natural gas prices are reflected in the trading hub known as "Chicago Citygate".

Only 7.3% of gas customers in Illinois have chosen a competitive natural gas supplier.[41] The remaining customers (92.7%) are served under regulated prices through their local utility. In Illinois, the utilities pass through their costs of natural gas with the "Purchased Gas Adjustment Rate." We examined the Purchased Gas Adjustment Rate for Illinois' three largest gas utilities and found that there was a significant increase ($1.15/MCF) in March. When we remove the impact of this increase, we find that retail prices actually decreased by 0.6%. This means that the entire increase in Illinois retail gas prices is due to utility-monopoly price increases, not competitive markets.

Table 11 – Illinois Retail Natural Gas Prices in February/March 2021

	Total Retail Price (Utility- Monopoly and Competitive Markets) ($/MCF)	Portion of Increase Due to Utility-Monopolies	Retail Price for Competitive Supply Customers ($/MCF)
Feb/Mar (Prev 3 Years)	6.92		6.92
Feb/Mar 2021	7.35	.47	6.88
Change (%)	**6.2%**		**-0.6%**

Despite a twelve-fold increase in natural gas prices in Illinois, we conclude there is no evidence that Illinois customers who chose a competitive supplier were exposed to these increases while utility-monopoly customers were.

Texas Power Competitive Market

The state that felt the most impact on wholesale power prices from Winter Storm Uri is undoubtedly Texas. Eye-popping headlines such as "Griddy customers face $5,000 electric bills for 5 freezing days in Texas"[42] were all over the news across the country and the world. While these headlines grabbed readers' attention, they leap to conclusions that are simply not accurate. First, that a high percentage of Texans paid exorbitant power bills and second that the reason so many Texans were paying these high power bills was because they had the ability to choose their energy supplier (i.e. the market was "deregulated").

There is no doubt that wholesale power prices in Texas were extreme. ERCOT wholesale prices in February normally average approximately 2.2 cents/kWh for the Houston zone[43]; but during Uri the price of spot market electricity sat at or near 9 dollars/kWh for 76 to 94 hours depending on ERCOT zone. Based on our analysis, if a typical customer living in Houston had to pay the full wholesale price for energy, ancillary services and other retail uplifts and their power had stayed

[41] U.S. Energy Information Administration, Natural Gas Annual 2019.
[42] https://www.thedailybeast.com/dollar5152-power-bill-texas-winter-storm-hell-only-gets-worse
[43] Figure is derived by averaging ERCOT Houston Zone LMP prices for the three Februaries prior to 2021.

on the entire period (which of course did not happen for most customers due to the widespread power outages), their electric bill would have been $4,969 for just the month of February[44].

The vast majority of customers, by some accounts approximately 75%,[45] were taking competitive service on fixed price plans that successfully shielded them from these high prices. As noted above, less than half a percent of residential competitive supply customers was on wholesale-based pricing plans. For those customers, the wholesale price increase was directly passed through resulting in a price increase of many times normal. However even for these customers, they will pay little to none of this increase due to ongoing litigation and government intervention.[46] While we could not find specific data on the number of competitive customers on variable prices, it's apparent that such customers received only a very small percentage of the wholesale price increase. Assuming 75% of customer enrollment in fixed prices, the remaining 24-25% of the population on month-to-month variable prices saw a pass-through of only about 1% of the gross wholesale price increase, which resulted in these rates increasing by approximately 21% for the month of February.

Impacts on Competitive Suppliers

Many competitive retailers saw substantial losses as a result of Winter Storm Uri. If retailers did not have large enough hedges to meet their customers' demand or saw their 'physical' hedges fail (for those that own affiliated power plants), the losses were dramatic.

From our research, we identified six suppliers that went bankrupt, seven that had to sell their businesses under distress, and five that stayed in business but had significant losses. In total, just from those suppliers that released their losses, we identified energy supplier losses of $3.3 billion. There are certainly more losses amongst energy suppliers than what we identified because losses were generally only released by public companies or companies facing bankruptcy. Privately held suppliers that lost money but did not file for bankruptcy or sell their business would not have reason to make their losses public.

Table 12 - Energy Supplier Losses in Choice Markets

Energy Supplier	Estimated Losses (millions)	Estimated Customers	Shareholder Consequence
Brilliant Energy[47]	$45	9,000	Bankruptcy/Distressed Sale

[44] Figure derived using historical prices for ERCOT Houston zone energy, ancillary services, uplifts, RUC, REC, and CRRs multiplied against residential load profile RESHIWR_COAST for the month of February 2021.
[45] https://www.keranews.org/news/2021-02-22/heres-what-to-expect-from-your-next-electricity-bill-in-texas
[46] March 16, 2021 Press Release "AG Paxton Ensures Forgiveness of $29 Million in Electric Bills for 24,000 Texans After Suing Griddy Energy, LLC"
[47] http://www.energychoicematters.com/stories/20210316zz.html

Constellation[48]	$800	120,558	Financial Losses
Energy Monger[49]	$7	3,756	Distressed Sale
Entrust Energy[50]	$270	63,000	Distressed Sale
GB Power[51]			Distressed Sale
Genie[52]	$13	375,000[53]	Financial Losses
Griddy[54]	$29	29,000	Bankruptcy
GridPlus Texas[55]	$1	915	Distressed Sale
Iluminar Energy[56]	$42		Distressed Sale
Just Energy[57]	$250	208,339	Bankruptcy
Liberty Power[58]	$81	25,000	Bankruptcy
NRG[59]	$967	2,900,000	Financial Losses
Pogo Energy[60]	$25	15,000	Bankruptcy
Power of Texas Holdings[61]			Bankruptcy
Pulse Power[62]	$200	100,000	Distressed Sale
Spark[63]	$65	367,000	Financial Losses
Vistra[64]	$510	2,724,000	Financial Losses
Volt Electricity Provider[65]	$1		Distressed Sale
Young Energy[66]		32,403	Financial Losses
Total	**$3,306**		

No Impact on Future Prices for Competitive Market Customers from Winter Storm Costs

We examined whether competitive supplier offer prices varied before and after Uri. While there was insufficient data to perform this analysis for Illinois and Nebraska, we were able to obtain

[48] Plaintiffs' Original Petition for Declaratory Judgement and Alternatively, Judicial Review in Exelon Generation Company, LLC and Constellation NewEnergy, Inc. vs Public Utility Commission of Texas; April 19, 2021.
[49] Letter from Drew Gormley to employees and brokers.
[50] https://www.law360.com/articles/1370826/texas-electric-retailer-hits-ch-11-with-400m-in-debt, https://www.prnewswire.com/news-releases/rhythm-acquires-customers-of-entrust-energy-inc-and-power-of-texas-holding-inc-301241112.html
[51] http://www.energychoicematters.com/stories/20210505ca.html
[52] https://www.bloomberg.com/press-releases/2021-03-08/genie-energy-estimates-preliminary-impact-of-winter-storm-uri-in-texas
[53] 10,000 of these customers were in Texas.
[54] Declaration of Michael Fallquist in Support of the Debtor's Chapter 11 Petitions and First Day Relief
[55] http://www.energychoicematters.com/stories/20210505ca.html
[56] http://www.energychoicematters.com/stories/20210505ca.html
[57] https://www.wsj.com/articles/texas-energy-fallout-tips-power-retailer-just-energy-into-bankruptcy-11615307592?page=1
[58] http://www.energychoicematters.com/stories/20210421a.html
[59] https://www.nrg.com/about/newsroom/2021/39596.html
[60] http://www.energychoicematters.com/stories/20210702aa.html
[61] https://www.bankruptcyobserver.com/bankruptcy-case/POWER-OF-TEXAS-HOLDINGS
[62] https://news.yahoo.com/texas-power-crisis-could-cripple-213639203.html
[63] http://www.energychoicematters.com/stories/20210506b.html
[64] https://filecache.investorroom.com/mr5ir_vistracorp_ir/174/1Q21-Earnings-Presentation_FINAL.pdf
[65] http://www.energychoicematters.com/stories/20210303zz.html
[66] https://news.yahoo.com/texas-power-crisis-could-cripple-213639203.html

detailed data on historical competitive offers before and after Uri for Texas from the Association of Electric Companies of Texas (AECT).

AECT collects detailed information on competitive supplier offers from the Texas Power to Choose website each month. This enabled us to look at the average 12-month fixed price offers of competitive suppliers for the four months prior to Winter Storm Uri (October 2020 to January 2021) to the same offers for the four months after Winter Storm Uri (March 2021 to June 2021). Not surprisingly we found that the number of offers declined significantly. Given the reduction in the number of competitors and the risk implied by the Uri wholesale prices, we would have expected that the average price of competitive offers would have increased – but in fact, we found the opposite. For every major distribution company, 12-month fixed price offers **decreased** anywhere from 0.3% to 2.5%. This demonstrates that the level of competition in Texas is robust and that this competition forces suppliers to keep their prices in check, even in the face of extreme events.

Table 13 - Texas Competitive Fixed Price Offers Before and After Uri[67]

	Distribution Company				
	AEP TX Central	**AEP TX North**	**Center Point**	**Oncor**	**TNMP**
Prices Before Uri (cents/kWh)	10.80	9.95	10.58	10.13	11.95
Prices After Uri (cents/kWh)	10.70	9.90	10.40	10.10	11.70
Change (%)	- 0.9%	- 0.3%	- 1.7%	- 0.5%	- 2.5%
Offers Before Uri	59	55	63	66	57
Offers After Uri	52	48	54	53	48
Change (%)	-12.2%	-12.4%	-14.6%	-19.0%	-17.0%

Choice Customer Impacts from ERCOT Cost Recovery

The last area we examined is any potential increase in choice customer costs because of regulatory cost recovery mechanisms. To this end, we only found one potential mechanism, Texas HB 4492. HB 4492 establishes a $2.1 billion mechanism to recoup the costs associated with ancillary service prices exceeding the $9,000/MWh ERCOT cap on energy as well as Reliability Deployment Price Adder charges assessed to load-serving entities ("Uplift Balance").[68] This mechanism applies to both competitive retailers and utility-monopoly entities and will reimburse a fraction of the costs previously paid by load-serving entities. HB 4492 requires that participating

[67] Association of Electric Companies of Texas -- 210701_PriceCheckWorksheet.

[68] The law also establishes a separate securitization of $800 million to resolve 'short payments' made to those who sold generation in the market but were not fully paid due to market-participant defaults. The costs of that borrowing will be paid by each market participant, including both regulated and competitive firms as well as financial traders, on the basis of their market activity.

load-serving entities repay these securitized bonds through "uplift charges" assessed by ERCOT in the future.[69]

We conservatively estimate that customers could end up paying these uplift charges, even though they are assessed by ERCOT to LSEs—and, as seen above, the competitive market does not ensure a competitive firm's recovery of any cost, including this one.[70] A typical residential customer could pay an extra 51 cents per month for the next 30 years as a result of the ERCOT securitization.[71] For competitive supplier customers, this still pales in comparison to the estimated $4,711 the same customer would have paid had they been directly exposed to the Uri related wholesale price. Under HB 4492, nearly all competitive retailers are required to participate in the securitization, while utility-monopolies have a choice to opt-out—and raise their own rates to cover those costs as well as the many others they experienced.

Cost Per Residential Customer

Lastly, we estimated the average cost incurred because of Winter Storm Uri by each residential customer that had energy choice in Texas and compared this figure to the average cost a utility-monopoly customer incurred.

To estimate the average cost incurred by Texas choice residential customers, we first used EIA monthly price data to estimate the total dollar increase paid by Texas residential choice customers in February 2021 over what they paid February 2020. While Winter Storm Uri may not have accounted for this entire increase, it likely accounted for most of it, and so the exercise served as a conservative benchmark. We then divided this number (approximately $91 million) by the 6,451,123 residential customers with retail choice in Texas to derive an average cost per customer of $14.13. We then added a conservative estimate of costs these customers may pay due to the Texas legislature's intervention in HB 4492. We estimate the total impact of HB 4492 on residential customers at approximately $818 million or $71.95 per residential customer. Adding both numbers, the total Winter Storm Uri cost impact per Texas residential choice customer is $86.09.

While the regulated utility numbers are known with relative certainty, this estimate of the average cost incurred by Texas choice residential customers is likely an overestimation because assumptions of cost pass-throughs reflect the extraordinary exposure of a small number of Griddy customers, most of whom have not had to pay their bills because of that firm's bankruptcy

[69] https://capitol.texas.gov/reports/report.aspx?LegSess=87R&ID=author&Code=A2515

[70] Unlike the ERCOT administrative fee, which LSEs have the opportunity to pass through directly from ERCOT on a cents-per-kWh basis, the PUCT has ruled that the uplift charge from HB 4492 is charged directly to the LSE based on its daily load ratio share, making any possible translation to and recovery from consumers inexact.

[71] Estimate assumes an interest rate on the debt at 2.5% annually, 2020 ERCOT annual kWh load, and a typical residential customer consuming an average of 1,409 kWh per month.

resolution. While the costs of HB 4492 could be higher or lower depending both on the number of opt-outs from ERCOT securitization, this figure does provide a conservative and reliable benchmark to compare the cost impacts on competitive supply customers.

Meanwhile, estimates of costs incurred by utility-monopoly residential customers were derived using similar data to that used to compile ***Table 8*** presented and discussed previously in this document. When the expected cost per residential customer for a specified utility-monopoly was provided as part of a Winter Storm Uri related regulatory filing, that figure was used. Figures not provided in regulatory filings were derived by estimating the percentage of the total recovery requested by each utility to be paid by residential customers and then dividing that figure by the number of residential customers in each utility. For state and commodity weighted averages, the total cost borne by residential customers per state and commodity was divided by the total number of residential customers.[72] Separate estimates were derived for power and gas. As previously illustrated in the executive summary, residential customers taking service from competitive suppliers were much better insulated from Winter Storm Uri costs than monopoly-utility customers were.

Table 14: Average Uri Costs Incurred per Residential Customer

Entity Type	Average Impact of Winter Storm Uri per Residential Customer
Power Competitive Suppliers - Texas	$86
Power Utility Monopolies - Texas	$373
Gas Utility Monopolies - Texas	$450
Power Utility-Monopolies - All Uri Impacted States	$326
Gas Utility-Monopolies - All Uri Impacted States	$381

V. Conclusions

The lessons from Winter Storm Uri are clear. Competitive markets protected consumers while utility-monopoly markets protected utility-monopolies and their shareholders at the expense of consumers. Further, the power and natural gas price spikes caused by Winter Storm Uri were the result of a disruption in the physical supply of natural gas and power and not due to the existence

[72] Data sources provided in the Appendix section.

of competitive retail energy markets, which are only found in three out of the fifteen states impacted by the storm.

Because the utility-monopoly paradigm is structured so that utility-monopolies pass through energy costs directly to the consumer while at the same time allowing them to lobby state commissions to recover financial losses on behalf of their shareholders, utilities had little incentive to implement safeguards to protect against an event like Winter Storm Uri. Competitive suppliers, on the other hand, provided an array of options for customers including price protection which shielded customers from high wholesale prices during Uri.

Finally, even in cases where utility-monopolies provided "fixed" prices to their customers, they still requested that their state commission allow them to recover Winter Storm Uri related financial losses from these same customers. Conversely, the competitive market prevented competitive energy suppliers from increasing rates to their customers during, immediately after, or even months after the storm.

Appendix

Sources Used - Tables 1, 2, 3, 7, 8 & 14

- *https://www.powermag.com/power-co-op-files-bankruptcy-after-2-1-billion-ercot-bill/#:~:text=Brazos%20Electric%20Power%20Cooperative%20filed,of%20the%20state's%20electricity%20grid*
- *EIA Table 54.1. Texas Reliability Entity.*
- *UNITED STATES SECURITIES AND EXCHANGE COMMISSION, Form 8-K, Current Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934, February 12 2021 Date of Report (Date of earliest event reported) - ATMOS ENERGY CORPORATION.*
- *AGA 2019 Annual Report of Volumes, Revenues, and Customers by Company.*
- *https://www.prnewswire.com/news-releases/rayburn-country-electric-cooperative-files-petition-with-the-public-utility-commission-of-texas-to-take-definitive-steps-to-protect-225-000-texans-from-excessive-costs-301241138.html*
- *https://competitivepower.org/wp-content/uploads/2021/06/ERCOT-Securitization-Legis-Comment.pdf*
- *https://www.lcra.org/about/overview/what-we-do/#:~:text=We%20manage%20the%20lower%20600,devastate%20Austin%20and%20other%20communities.*
- *https://www.thecentersquare.com/colorado/colorado-public-utility-regulators-set-to-hear-more-rate-increase-proposals/article_59c2727a-1585-11ec-be3f-cb89355715dc.html*
- *https://www.blackhillsenergy.com/community/committed-serving-southern-colorado*
- *February freeze KS gas price hikes: things you need to know | The Kansas City Star*
- *ARKANSAS PUBLIC SERVICE COMMISSION, DOCKET NO. 21-036-U, THE EMPIRE DISTRICT ELECTRIC COMPANY'S WINTER STORM ASSESSMENT REPORT IN RESPONSE TO ORDER NO. 8, Page 18.*
- *EIA Table 54.6. Midcontinent ISO / South.*
- *EIA Table 54.18. Southwest Power Pool / Central.*
- *EIA Table 54.20. Western Electricity Coordinating Council / Southwest.*
- *THE PUBLIC UTILITIES COMMISSION OF THE STATE OF COLORADO, PROCEEDING NO. 21A-___G, DIRECT TESTIMONY PHIL MARCUM, COLORADO NATURAL GAS, INC., Page 3.*
- *THE COMMISSION OF THE STATE OF OKLAHOMA, CAUSE NO. 202100042, APPLICATION OF CENTERPOINT ENERGY OKLAHOMA GAS FOR APPROVAL OF A REGULATORY ASSET FOR RECOVERY OF EXTRAORDINARY GAS SUPPLY COSTS ARISING FROM EXTREME WINTER WEATHER, Page 2.*
- *THE COMMISSION OF THE STATE OF OKLAHOMA, CAUSE NO. 202100057, APPLICATION OF FORT COBB FUEL AUTHORITY, LLC FOR APPROVAL OF SPECIAL REGULATORY TREATMENT FOR ABNORMAL GAS SUPPLY COSTS ARISING FROM EXTREME WINTER WEATHER, Page 2.*

- *IN THE MATTER OF THE APPLICATION OF OKLAHOMA GAS AND ELECTRIC COMPANY FOR A FINANCING ORDER PURSUANT TO THE FEBRUARY 2021 REGULATED UTILITY CONSUMER PROTECTION ACT APPROVING SECURITIZATION OF COSTS ARISING FROM THE WINTER WEATHER EVENT OF FEBRUARY 2021, Cause No. 202100072, Direct Testimony of Charles B. Walworth on behalf of Oklahoma Gas and Electric Company, Page 3.*
- *https://www.startribune.com/minnesota-regulators-scold-natural-gas-providers-for-cost-run-up-during-february-storm/600085215/*
- *BEFORE THE RAILROAD COMMISSION OF TEXAS, PPLICATION CENTERPOINT ENERGY RESOURCES CORP., D/B/A CENTERPOINT ENERGY ENTEX, CENTERPOINT ENERGY ARKLA, AND CENTERPOINT ENERGY TEXAS GAS FOR CUSTOMER RATE RELIEF AND RELATED REGULATORY ASSET DETERMINATION, Page 49.*
- *EIA Data Tables, Class of ownership, number of consumers, sales, revenue, and average retail price by State and utility, Table 6 - Residential sector*
- *EIA Data Tables, Class of ownership, number of consumers, sales, revenue, and average retail price by State and utility, Table 10 - All sectors*
- *BEFORE THE STATE CORPORATION COMMISSION OF THE STATE OF KANSAS, In the Matter of the Application of Southern Pioneer Electric Company for Approval of a Regulatory Asset, Allocation and Implementation Plan for Recovery of Extraordinary Costs Incurred as a Result of Extreme Weather and Market Conditions Experienced During the Month of February 2021, Docket No. 21-SPEE-331-GIE, Pages 2-3.*
- *https://www.sunflower.net/wp-content/uploads/2020/05/2018-SEPC-web.pdf*
- *BEFORE THE STATE CORPORATION COMMISSION OF THE STATE OF KANSAS, In the Matter of the Investigation into Kansas Gas Service Company, a Division of One Gas Inc. Regarding the February 2021 Winter Weather Events, as Contemplated by Docket No. 21-GIMX-303-MIS, Docket No. 21-KGSG-332-GIG, MOTION TO AMEND AND CORRECT THE AMOUNT OF DOCUMENTED FEBRUARY 2021 COSTS ASSOCIATED WITH WINTER STORM URI – ON A KCC JURISDICTIONAL AND NON-JURISDICTIONAL BASIS, Pages 2-3.*
- *BEFORE THE STATE CORPORATION COMMISSION OF THE STATE OF KANSAS, DIRECT TESTIMONY OF RONALD A. KLOTE ON BEHALF OF EVERGY KANSAS METRO, INC., EVERGY KANSAS CENTRAL, INC. AND EVERGY KANSAS SOUTH, INC., IN THE MATTER OF THE INVESTIGATION INTO EVERGY KANSAS METRO AND EVERGY KANSAS CENTRAL REGARDING THE FEBRUARY 2021 WINTER WEATHER EVENTS, AS CONTEMPLATED BY DOCKET NO. 21-GIMX-303-MIS, DOCKET NO. 21-EKME-329-GIE, Page 14.*
- *Xcel Energy, FEBRUARY EXTREME WEATHER EVENT REPORT – ACCOUNTING CLOSE SUPPLEMENT PROCEEDING NO. 20I-0076EG APRIL 15, 2021, Pages 5, 10 & 11*
- *BEFORE THE ARKANSAS PUBLIC SERVICE COMMISSION IN THE MATTER OF THE APPLICATION OF SOUTHWESTERN ELECTRIC POWER COMPANY FOR APPROVAL OF A GENERAL CHANGE IN RATES AND TARIFFS SUPPLEMENTAL DIRECT TESTIMONY OF RENEE V. HAWKINS ON BEHALF OF SOUTHWESTERN ELECTRIC POWER COMPANY, DOCKET NO. 19-008-U, Page 3.*

- *Entergy Corporation and Subsidiaries Management's Financial Discussion and Analysis, Page 3: https://entergycorporation.gcs-web.com/static-files/2d307ed1-54d2-45fc-b1a3-2efc9f2e00bd*
- *BEFORE THE ARKANSAS PUBLIC SERVICE COMMISSION, IN THE MATTER OF AN INVESTIGATION INTO THE OPERATIONS, PROCEDURES, AND ERFORMANCES OF THE REGULATED UTILITIES DURING THE WINTER WEATHER EVENT IN FEBRUARY 2021, DOCKET NO. 21.036-U, SOUTH CENTRAL ARKANSAS ELECTRIC COOPERATIVE, INC. WINTER STORM ASSESSMENT REPORT IN RESPONSE TO ORDER NO. 8, Page 4.*
- *BEFORE THE ARKANSAS PUBLIC SERVICE COMMISSION, IN THE MATTER OF AN INVESTIGATION INTO THE OPERATIONS, PROCEDURES, AND ERFORMANCES OF THE REGULATED UTILITIES DURING THE WINTER WEATHER EVENT IN FEBRUARY 2021, DOCKET NO. 21.036-U, PETIT JEAN ELECTRIC COOPERATIVE'S WINTER STORM ASSESSMENT REPORT IN RESPONSE TO ORDER NO. 8, Page 5.*
- *BEFORE THE ARKANSAS PUBLIC SERVICE COMMISSION, IN THE MATTER OF AN INVESTIGATION INTO THE OPERATIONS, PROCEDURES, AND ERFORMANCES OF THE REGULATED UTILITIES DURING THE WINTER WEATHER EVENT IN FEBRUARY 2021, DOCKET NO. 21.036-U, OUACHITA ELECTRIC COOPERATIVE CORPORATION WINTER STORM ASSESSMENT REPORT IN RESPONSE TO ORDER NO. 8, Page 5.*
- *BEFORE THE ARKANSAS PUBLIC SERVICE COMMISSION, IN THE MATTER OF AN INVESTIGATION INTO THE OPERATIONS, PROCEDURES, AND ERFORMANCES OF THE REGULATED UTILITIES DURING THE WINTER WEATHER EVENT IN FEBRUARY 2021, DOCKET NO. 21.036-U, CARROLL ELECTRIC COOPERATIVE CORPORATION'S WINTER STORM ASSESSMENT REPORT IN RESPONSE TO ORDER NO. 8, Pages 5-6.*
- *BEFORE THE ARKANSAS PUBLIC SERVICE COMMISSION, IN THE MATTER OF AN INVESTIGATION INTO THE OPERATIONS, PROCEDURES, AND ERFORMANCES OF THE REGULATED UTILITIES DURING THE WINTER WEATHER EVENT IN FEBRUARY 2021, DOCKET NO. 21.036-U, NORTH ARKANSAS ELECTRIC COOPERATIVE'S WINTER STORM ASSESSMENT REPORT IN RESPONSE TO ORDER NO. 8, Page 7.*
- *BEFORE THE ARKANSAS PUBLIC SERVICE COMMISSION, IN THE MATTER OF AN INVESTIGATION INTO THE OPERATIONS, PROCEDURES, AND ERFORMANCES OF THE REGULATED UTILITIES DURING THE WINTER WEATHER EVENT IN FEBRUARY 2021, DOCKET NO. 21.036-U, OZARKS ELECTRIC WINTER STORM ASSESSMENT REPORT IN RESPONSE TO ORDER NO. 8, Page 6.*
- *BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA, APPLICATION OF PUBLIC SERVICE COMPANY OF OKLAHOMA ("PSO") FOR APPROVAL OF REGULATORY TREATMENT, INCLUDING THE CREATION OF A REGULATORY ASSET FOR THE COLLECTION OF INCREASED COSTS CAUSED BY THE EXTREME WINTER WEATHER, AND APPROVAL OF A TEMPORARY COST RECOVERY MECHANISM; AND SUCH OTHER RELIEF THE COMMISSION DEEMS PSO IS ENTITLED, CAUSE NO. PUD 202100040, MOTION FOR ESTABLISHMENT OF A REGULATORY ASSET, Page 1.*
- *BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA, CAUSE NO. PUD 202100037, ORDER 717354, ORDER GRANTING MOTION TO ESTABLISH REGULATORY ASSET AND FOR WAIVER, Page 2.*
- *BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA, IN THE MATTER OF THE APPLICATION OF OKLAHOMA GAS AND ELECTRIC COMPANY FOR A FINANCING ORDER PURSUANT*

TO THE FEBRUARY 2021 REGULATED UTILITY CONSUMER PROTECTION ACT APPROVING SECURITIZATION OF COSTS ARISING FROM THE WINTER WEATHER EVENT OF FEBRUARY 2021, Cause No. 202100072, Direct Testimony of Donald R. Rowlett on behalf of Oklahoma Gas and Electric Company, Page 13.

- *BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA, APPLICATION OF PUBLIC SERVICE COMPANY OF OKLAHOMA ("PSO") FOR APPROVAL OF A FINANCING ORDER FOR THE COLLECTION OF INCREASED COSTS, CAUSED BY THE EXTREME WINTER WEATHER AND CONTAINED IN THE REGULATORY ASSET AUTHORIZED BY ORDER 717625, INCLUDING AN APPROPRIATE CARRYING COST, AND SUCH OTHER RELIEF AS THE COMMISSION DEEMS PSO IS ENTITLED, CAUSE NO. PUD 202100076, DIRECT TESTIMONY OF SHAWNNA G. JONES ON BEHALF OF PUBLIC SERVICE COMPANY OF OKLAHOMA AUGUST 2021, Page 6.*
- *BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA, CAUSE NO. PUD 202100050, ORDER 717356, ORDER GRANTING MOTION TO ESTABLISH REGULATORY ASSET AND FOR WAIVER, Page 2.*
- *ENTERGY CORPORATION, FORM 10-K, ENTERGY CORPORATION AND SUBSIDIARIES MANAGEMENT'S FINANCIAL DISCUSSION AND ANALYSIS, Page 3.*
- *STATE OF MISSOURI PUBLIC SERVICE COMMISSION, File No. ER-2021-0332, Tariff No. JE-2021-0178, ORDER REJECTING TARIFF TO CHANGE FUEL ADJUSTMENT RATES, Page 2.*
- *MISSOURI PUBLIC SERVICE COMMISSION FINANCIAL AND BUSINESS ANALYSIS AND INDUSTRY ANALYSIS DIVISIONS AND REGULATORY ANALYSIS DEPARTMENT REPORT, IN THE MATTER OF THE CAUSE OF THE FEBRUARY 2021 COLD WEATHER EVENT AND ITS IMPACT ON THE EMPIRE DISTRICT GAS COMPANY, D/B/A LIBERTY, FILE NO. GO-2021-0365, APRIL 30, 2021, Page 72.*
- *BEFORE THE NEBRASKA PUBLIC SERVICE COMMISSION, Docket No. NG-111.1, Application No. NG-111/PI-237, ORDER APPROVING RECOVERY PLAN, Entered: May 25, 2021, Pages 1-2.*
- *BEFORE THE NEBRASKA PUBLIC SERVICE COMMISSION, Docket No. NG-111.2, Application No. NG-111/PI-237, ORDER APPROVING RECOVERY PLAN, Entered: May 21, 2021, Page 2.*
- *Xcel Energy, North Dakota Public Service Commission, EXTREME COLD WEATHER EVENT INVESTIGATION (NATURAL GAS) COST OF GAS TRUE-UP CALCULATIONS FOR JULY 1, 2021 IMPLEMENTATION CASE NOS. PU-21-9 AND PU-21-10, Page 2 & Attachment A Page 1.*
- *BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION, IN THE MATTER OF NEW MEXICO GAS COMPANY, INC.'S APPLICATION FOR AN EXPEDITED VARIANCE APPROVING ITS PLAN FOR RECOVERY OF THE GAS COSTS RELATED TO THE 2021 WINTER EVENT, CASE NO. 21-00095-UT, FINAL ORDER, Page 6.*
- *BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION, IN THE MATTER OF A COMMISSION, INQUIRY INTO IMPACTS OF FEBRUARY 2021 EXTREME WEATHER EVENT ON UTILITIES AND RATEPAYERS, Case No. 21-00045-UT, PUBLIC SERVICE COMPANY OF NEW MEXICO'S RESPONSE TO INITIAL ORDER OPENING INQUIRY, Page 3.*
- *BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION, IN THE MATTER OF SOUTHWESTERN PUBLIC SERVICE COMPANY'S REQUEST FOR SUSPENSION OF ITS FUEL AND PURCHASED POWER COST ADJUSTMENT CLAUSE; ESTABLISHMENT OF A REGULATORY ASSET;*

APPROVAL OF A SURCHARGE AND A TRUE-UP MECHANISM, CASE NO. 21-00046-UT, ORDER GRANTING VARIANCE WITH CONDITIONS AND GRANTING MOTION TO INTERVENE, Page 2.

- *BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION, IN THE MATTER OF THE APPLICATION OF ZIA NATURAL GAS COMPANY, A DIVISION OF NATURAL GAS PROCESSING CO., FOR AN EXPEDITED ADJUSTMENT TO ITS PURCHASED GAS ADJUSTMENT CLAUSE, Case No. 21-00096-UT, FINAL ORDER GRANTING ZIA'S APPLICATION WITH MODIFICATIONS AND, CONDITIONS, Page 14.*
- *BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION, IN THE MATTER OF A COMMISSION, INQUIRY INTO IMPACTS OF FEBRUARY 2021 EXTREME WEATHER EVENT ON UTILITIES AND RATEPAYERS, Case No. 21-00045-UT, EL PASO ELECTRIC COMPANY'S RESPONSE TO INQUIRIES, Page 2.*
- *MEMORANDUM, Montana-Dakoda Utilities Co. February 2021 Extreme Cold Event Investigation – Natural Gas, Case No. PU-21-101, Page 1.*
- *BEFORE THE ARKANSAS PUBLIC SERVICE COMMISSION, IN THE MATTER OF AN INVESTIGATION INTO THE OPERATIONS, PROCEDURES AND PERFORMANCES OF THE REGULATED UTILITIES DURING THE WINTER WEATHER EVENT FEBRUARY 2021, DOCKET NO. 21-036-U, DIRECT TESTIMONY OF ANDREW LACHOWSKY ON BEHALF OF ARKANSAS ELECTRIC COOPERATIVE CORPORATION, Page 10.*
- Arkansas Electric Cooperative Corporation - Wikipedia
- *STATE OF IOWA BEFORE THE IOWA UTILITIES BOARD, IN RE: ORDER AUTHORIZING REGULATORY ACCOUNTS AND ESTABLISHING ADDITIONAL REPORTING INSTRUCTIONS, Docket No. PGA-2020-0222, PROPOSAL FOR USE OF REGULATORY ACCOUNTS, Page 4.*
- *https://www.globenewswire.com/news-release/2021/03/01/2184296/10381/en/Black-Hills-Corp-Provides-Estimated-Impact-of-Recent-Cold-Weather-on-its-Utilities-by-State.html*
- 0000004904-21-000010 (d18rn0p25nwr6d.cloudfront.net), Page 81.
- CPS Energy faces $1 billion bill for winter weather power crisis (ksat.com)
- Fitch Affirms Lower Colorado River Authority, TX at 'AA-'; Negative Watch Removed; Outlook Negative (fitchratings.com)
- *https://www.lcra.org/about/overview/what-we-do/*
- *https://www.newschannel10.com/2021/06/07/xcel-energy-southwestern-public-service-filed-raise-rates-2-year/?outputType=apps*
- *https://www.texasgasservice.com/media/TGS/Securitization%20Filing/210816-TGS-Securitization-Application.pdf, PDF Page 113.*