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Beyond Texas

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

Updated Version for the Most Recent State Actions

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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," bearing the implication 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 this Update

This paper is an update to the original version published in October 2021. This latest version includes updates to storm related recovery figures based on the latest public utility commission dockets dealing with the aftermath of Winter Storm Uri as well as other information that has come to light since the paper's previous publication. In addition, we have removed the section titled ***Utility-Monopoly "Fixed Rates"*** due to feedback from the Public Utility Division ("PUD") of the Oklahoma Corporation Commission ("OCC"). Changes made in this updated version are provided in the Appendix section.

About the Authors

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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 (including interest expense incurred by spreading the repayment over time and 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	Not Applicable
Colorado	6	$922	Utility Ratepayers	$133	$357
Iowa	2	$95	Utility Ratepayers	Not Applicable	$1,478
Illinois	3	Figures Unavailable	Utility Ratepayers	Not Applicable	Figures Unavailable
Kansas	11	$536	Utility Ratepayers	$105	$606
Louisiana	4	$81	Utility Ratepayers	$54	Not Applicable
Minnesota	4	$601	Utility Ratepayers	Not Applicable	$238
Missouri	5	$533	Utility Ratepayers	$658	$367
Mississippi	1	$45	Utility Ratepayers	$22	Not Applicable
North Dakota	4	$52	Utility Ratepayers	$19	$124
Nebraska	2	$112	Utility Ratepayers	Not Applicable	$368
New Mexico	6	$186	Utility Ratepayers	$26	$174
Oklahoma	8	$2,806	Utility Ratepayers	$427	$1,195
South Dakota	4	$67	Utility Ratepayers	$87	$161
Texas - Regulated Utilities**	15	$8,379	Utility Ratepayers	$498	$351
*Texas - ERCOT Securitization (HB 4492) ****	*Figures Unavailable*	$2,100	*All ERCOT Customers*	$72	
Total without ERCOT HB4492	**85**	**$14,789**			
Total with ERCOT HB4492		**$16,889**			

***** *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 85 utilities either seeking or approved storm related recovery of nearly $14.8 billion,[6] to be paid by ratepayers, with residential customers paying an estimated 53% of that total. These utility-monopolies seek not only to recoup losses at their customers' expense, but, in at least some cases, to also 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 will also 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	$2,100.00	Ratepayers/Creditors
Atmos Energy	TX	Gas	$2,022.23	Ratepayers
CenterPoint Energy	TX	Gas	$1,100.43	Ratepayers
Bluebonnet Natural Gas LLC	TX	Gas	$1.96	Ratepayers
Cortix Utilties Inc	TX	Gas	$0.29	Ratepayers
EPCOR Gas Texas Inc	TX	Gas	$11.30	Ratepayers
SiEnergy LP	TX	Gas	$18.80	Ratepayers
Universal Natural Gas Inc	TX	Gas	$32.43	Ratepayers
CPS Energy	TX	Power	$1,000.00	Ratepayers
Rayburn Country Electric Cooperative Inc	TX	Power	$908.00	Ratepayers
Lower Colorado River Authority	TX	Power	$380.00	Ratepayers
Southwestern Electric Power Co	TX	Power	$375.00	Ratepayers
Southwestern Public Service Co	TX	Power	$76.00	Ratepayers
Texas Gas Service (One Gas Inc)	TX	Gas	$197.37	Ratepayers
Entergy Texas Inc.	TX	Power	$155.00	Ratepayers

[6] Not all utilities seeking relief identified the amounts sought. As such, the $14.789 billion figure is a conservative estimate of the minimum that will be recovered from customers.

Total	**$8,379**

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 most 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 the ERCOT securitization 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	$82 [7]
Power Utility Monopolies - Texas	$498
Gas Utility Monopolies - Texas	$351
Power Utility-Monopolies - All Uri Impacted States	$283
Gas Utility-Monopolies - All Uri Impacted States	$342

II. Fuel Price Spikes During Severe Weather

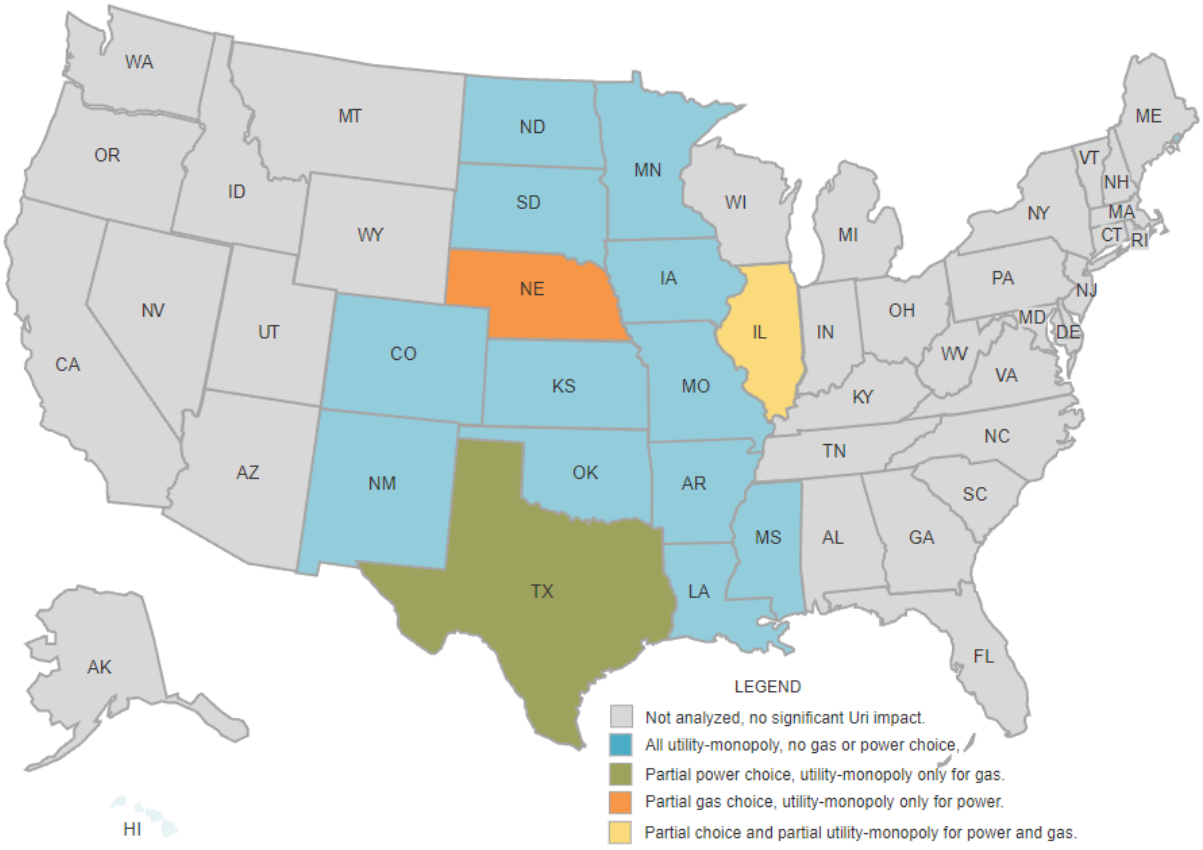
The severe weather of Winter Storm Uri caused a decline in natural gas production, as well as a decrease in electric generation, even as customer demand rose dramatically, resulting in very high wholesale prices in both these markets throughout a 15-state region. Certain utility executives and others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

[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 $10 per customer) is discussed later in this paper.

competition policy. The reality is that 12 out of the 15 states that experienced the most significant 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

[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.

Chicago City Gate	Illinois	$2.32	$72	$130
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, had a cap on the wholesale spot price of power prior to and during the storm of $9,000/MWh[13]. 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.[14] 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[15]

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[16]
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.[17] Rather, we focused on if and to what extent these extreme prices made their way to residential customers.

[13] The ERCOT price cap was lowered to $2,000/MWh in the aftermath of the storm.
[14] https://www.spglobal.com/platts/en/market-insights/latest-news/natural-gas/021621-texas-regulators-keep-prices-near-9000mwh-cap-during-rotating-outages
[15] 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.
[16] Although these figures are above the ERCOT $9,000 per MWh cap, they were posted by ERCOT as actuals.
[17] 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.[18]

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 85 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.[19] 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 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.

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

[19] 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 $15 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[20]

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.

[20] 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 gas customers in terms of the dollar amount each residential customer will be charged because of the storm. Although we do note that storm related costs in Texas were mitigated due to widespread blackouts during 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	$427	$1,195
Texas - Regulated Utilities	$498	$351

***** *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,[21] 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[22] 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[23] enables gas utilities to recover costs they may incur to secure gas supply and provide service during natural and man-made

[21] http://www.oklegislature.gov/BillInfo.aspx?Bill=SB%201050&Session=2100
[22] https://capitol.texas.gov/tlodocs/87R/billtext/html/SB01580F.htm
[23] 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.

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 Recovery (in $ millions)	Recovery Source	Recovery Mechanism
Brazos Electric Coop	TX	Power	$2,100.0	Ratepayers/Creditors	Securitization
Atmos Energy	TX	Gas	$2,022.2	Ratepayers	Securitization
CenterPoint Energy	TX	Gas	$1,100.4	Ratepayers	Securitization
Bluebonnet Natural Gas LLC	TX	Gas	$2.0	Ratepayers	Securitization
Cortix Utilties Inc	TX	Gas	$0.3	Ratepayers	Securitization
EPCOR Gas Texas Inc	TX	Gas	$11.3	Ratepayers	Securitization
SiEnergy LP	TX	Gas	$18.8	Ratepayers	Securitization
Universal Natural Gas Inc	TX	Gas	$32.4	Ratepayers	Securitization
CPS Energy	TX	Power	$1,000.0	Ratepayers	*
Rayburn Country Electric Cooperative Inc	TX	Power	$908.0	Ratepayers	*
Lower Colorado River Authority	TX	Power	$380.0	Ratepayers	*
Southwestern Electric Power Co	TX	Power	$375.0	Ratepayers	*
Southwestern Public Service Co	TX	Power	$76.0	Ratepayers	Tracker
Texas Gas Service (One Gas Inc)	TX	Gas	$197.4	Ratepayers	Securitization
Entergy Texas Inc.	TX	Power	$155.0	Ratepayers	*
Black Hills Power, Inc. d/b/a	SD	Power	$15.0	Ratepayers	*
MidAm Gas	SD	Gas	$35.2	Ratepayers	Tracker
NorthWestern Energy - (SD)	SD	Power	$11.4	Ratepayers	Tracker
MDU	SD	Gas	$5.2	Ratepayers	Tracker
Oklahoma Natural Gas	OK	Gas	$1,284.1	Ratepayers	Securitization
Oklahoma Gas & Electric Co	OK	Power	$739.0	Ratepayers	Securitization
Public Service Co of Oklahoma	OK	Power	$675.2	Ratepayers	Securitization
CenterPoint	OK	Gas	$76.1	Ratepayers	Securitization
Arkansas OK Gas	OK	Gas	$22.0	Ratepayers	Securitization
Empire District Electric Co	OK	Power	$6.7	Ratepayers	Securitization
Fort Cobb Fuel Authority	OK	Gas	$0.6	Ratepayers	*
Grand River Dam Authority (GRDA)	OK	Power	$2.7	Ratepayers	*
New Mexico Gas Company	NM	Gas	$110.1	Ratepayers	*
Public Service Co of NM	NM	Power	$28.5	Ratepayers	*

Southwestern Public Service Co	NM	Power	$20.0	Ratepayers	*
Zia Gas	NM	Gas	$19.6	Ratepayers	*
Raton Natural Gas	NM	Gas	$1.1	Ratepayers	*
El Paso Electric Co	NM	Power	$6.8	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	*
Montana-Dakota Utilities Co	ND	Power	$1.5	Ratepayers	Tracker
Otter Tail Power Co	ND	Power	$4.5	Ratepayers	Tracker
Entergy Mississippi LLC	MS	Power	$45.0	Ratepayers	*
Empire District Electric Co	MO	Power	$168.7	Ratepayers	Tracker
Empire Gas	MO	Gas	$31.2	Ratepayers	Tracker
Evergy Missouri West	MO	Power	$297.3	Ratepayers	Securitization
Liberty Midstates Natural Gas	MO	Gas	$5.5	Ratepayers	Tracker
Summit Natural Gas	MO	Gas	$30.7	Ratepayers	Tracker
CenterPoint	MN	Gas	$371.1	Ratepayers	Deferred Accounting
Northern States PWR Co	MN	Gas	$160.0	Ratepayers	*
MERC	MN	Gas	$62.0	Ratepayers	
Great Plains	MN	Gas	$8.0	Ratepayers	*
Entergy Louisiana LLC	LA	Power	$4.4	Ratepayers	Deferred Accounting
Entergy New Orleans, LLC	LA	Power	$15.0	Ratepayers	*
Cleco Power LLC	LA	Power	$10.1	Ratepayers	Securitization
Southwestern Electric Power Co	LA	Power	$51.5	Ratepayers	Tracker
Kansas Gas Service	KS	Gas	$65.4	Ratepayers	Securitization
Evergy Kansas Central, Inc	KS	Power	$113.1	Ratepayers	Deferred Accounting
Southern Pioneer Electric Company	KS	Power	$17.0	Ratepayers	Deferred Accounting
Sunflower Electric	KS	Power	$92.5	Ratepayers	*
Black Hills Gas	KS	Gas	$87.9	Ratepayers	*
Atmos Energy	KS	Gas	$102.5	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	*
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	$0.5	Ratepayers	Deferred Accounting
Black Hills Gas	IA	Gas	$94.5	Ratepayers	Tracker
PUB SERVICE CO OF COLORADO	CO	Gas	$287.0	Ratepayers	Tracker

Public Service Co of Colorado	CO	Power	$509.0	Ratepayers	Tracker
Black Hills	CO	Gas	$72.7	Ratepayers	Tracker
Black Hills Colorado Electric, LLC	CO	Power	$23.2	Ratepayers	*
Atmos Energy	CO	Gas	$23.5	Ratepayers	*
Colorado Natural Gas	CO	Gas	$7.1	Ratepayers	*
Southwestern Electric Power Co	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
Total			**$14,789**		

As ***Table 8*** illustrates, approximately $14.85 billion is being requested by monopoly-utilities to be recovered from monopoly-utility customers. Of that total, we estimate that approximately $7.85 billion or 53% will be recovered from residential customers.[24]

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 mild exception may be Minnesota where the Minnesota Public Utilities Commission appears poised to disallow approximately $60 million from a combined $660 million in requested recovery from CenterPoint, Northern States PWR Co, MERC and Great Plains.[25] This was after the Attorney General came 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**

[24] Dollar & percentage figure estimates derived by multiplying the cost per residential customer multiplied by the number of residential customers in each utility.
[25] PUC reduces costs to consumers by $58.5 million from Winter Storm Uri (govdelivery.com)

> **not have to pay the high commodity prices they were facing, because the costs would be passed on to ratepayers.** (emphasis added)[26]

The Minnesota AG's Office further said the cost pass-through allowed utilities to essentially conduct business-as-usual during the big price spike. "Do you think the utility would have behaved differently if it was on the hook for the expenses?" the AG's Office said.[27] This sentiment was echoed by Minnesota PUC Commissioner Joe Sullivan who said "If utilities' own resources were at risk, I think they would have made different decisions".[28] Regardless of the outcry from the Minnesota AG and others, in the end, the Minnesota PUC is primed to only disallow approximately 10% of the Minnesota utility-monopolies' original ask, leaving Minnesota's captive utility-monopoly customers on the hook for hundreds of millions of dollars.

We also note that 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 the time of CenterPoint's request, customers could refinance their homes at less than 3 or 4%, yet 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.[29]

Higher Interest Rates Could Cost Utility-Monopoly Customers Millions More

While interest rates have remained steady for the past number of years, high inflation observed in 2022 has resulted in the Federal Reserve moving interest rates upward. Higher interest rates can raise the interest expense of utility-monopoly cost recovery, especially the securitizations approved in Texas, Oklahoma, and Kansas that spread the payback period over decades.. For captive utility-monopoly customers already saddled with paying millions in utility-monopoly losses stemming from Winter Storm Uri this can mean paying additional dollars to make utility-monopoly shareholders whole, and, in some cases, paying hundreds of millions of dollars more.

Because the regulated utility-monopoly structure is such that prices to the consumer are based on past costs incurred, any long-run financing of such costs can saddle captive customers with a high degree of additional costs during periods of high or rising interest rates. When dealing with

[26] 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.
[27] https://www.startribune.com/minnesota-regulators-hear-final-arguments-from-utilities-on-february-2021-storm-costs/600195826/
[28] Minnesota consumers will pay $600M in extra costs from February 2021 storm (startribune.com)
[29] See Docket No. NG-111.2, Application No. NG-111/PI-237, ORDER APPROVING RECOVERY PLAN, Entered: May 11, 2021.

securitization packages worth hundreds of millions or even billions of dollars to be recovered across many years, even a slight uptick in interest rates can result in a large amount of additional payment. Take an example where a utility-monopoly securitizes $500 million over 10 years. At an annual interest rate of 2%, ratepayers would pay over $50 million in interest. A 3% annual interest rate would raise that interest payment to nearly $80 million. In this current environment of rising interest rates, ratepayers are now being asked to pay more interest expense than originally envisioned when their utility-monopoly securitization was initially requested.

In Oklahoma, for example, the OCC released its Final Financing Order regarding OG&E's request to recover Winter Storm Uri related losses. The Order stipulated that OG&E can recover $739 million in Winter Storm Uri related costs from their captive customers over a 28 year period.[30] According to OCC Commissioner Bob Anthony, OG&E customers will be paying a bond interest rate of nearly 5% over the associated 28-year period because customers were put on the hook for the risk of rising interest rates instead of OG&E shareholders, when initial expectations during securitization discussions was for 2.58%.[31] The expected total interest payment to be borne by OG&E customers as a result is expected to be $639 million, $330 million higher than initial projections.

Meanwhile in February 2022, the Texas Railroad Commission approved $3.4 billion in securitization for the state's regulated gas utilities Atmos Energy, Bluebonnet, CenterPoint, Corix, EPCOR, SiEnergy, Texas Gas Service, and UniGas.[32] As of this writing, the Texas Public Finance Authority has not yet issued the bonds but have witnessed the Federal Reserve increase interest rates four times in the interim. While the bonds may secure the lowest interest rates still possible, the wait will no doubt result in several additional percentage points of interest that the ratepayers – not the utility shareholders – will now pay for.

Customers of competitive retail suppliers, by contrast, don't pay any backward-looking cost recovery for their extraordinary fuel costs, so they also don't incur any financing costs for that debt nor, therefore, any risk of that financing cost increasing. Ratepayers of a regulated utility-monopoly not only have to shoulder the full weight of the extraordinary fuel costs for their supply, they must pay a few extra percentage points to finance that repayment, and – to add insult to injury – must subsequently face the interest rate risk on that financing.

[30] See OCC Final Financing Order, Order No. 722254, in Cause No. PUD 202100072, pages 6-7

[31] Revised Continuation of Dissenting Opinion by Commissioner Bob Anthony (ok.gov)

[32] See Railroad Commission of Texas. Financing Order in OS-21-00007061 Consolidated Applications for Customer Rate Relief and Related Regulatory Asset Determination in Connection with the February 2021 Winter Storm, February 8, 2022, Table 4, p. 26 for asset amounts by utility.

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. 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	Gas Customers Participating in Choice[34]	Gas Customers not

[34] https://www.eia.gov/naturalgas/annual/pdf/table_026.pdf

		Participating in Choice[33]		Participating in Choice[35]
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[36]	3,736,852	287,891[37]	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
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[38]	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,"[39] 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 never have to pay those bills.[40]

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.

[33] https://www.eia.gov/electricity/sales_revenue_price/pdf/table1.pdf
[35] https://www.eia.gov/dnav/ng/ng_cons_num_a_EPG0_VN3_Count_a.htm
[36] http://pluginillinois.org/
[37] EIA Natural Gas Annual, Table 26 - Number of Consumers Eligible and Participating in a Customer Choice Program in the Residential Sector, 2020
[38] https://www.eia.gov/electricity/sales_revenue_price/pdf/table6.pdf
[39] https://www.forbes.com/sites/jonathanponciano/2021/02/20/17000-electric-bill-deregulated-power-grid-texas-griddy/?sh=408e7e0258ba
[40] Settlement takes Griddy customers off the hook for winter storm bills (statesman.com)

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)[41] is fixed for the term of the agreement.[42] Where the total monthly cost is fixed, the effective $/kWh or $/therm will go up or down based on the monthly 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.[43]
- ***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,[44] 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

[41] Residential gas customers may be measured in different units depending on the utility, we use therms here as a common reference for explanatory purposes.
[42] 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.
[43] It's worth noting that competitive suppliers may hedge variable price offers just as they do fixed price offers.
[44] Electricity Prices During the 2021 Winter Storm, Prepared by the Public Utility Commission of Texas 2/21/2021.

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[45]

	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
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.

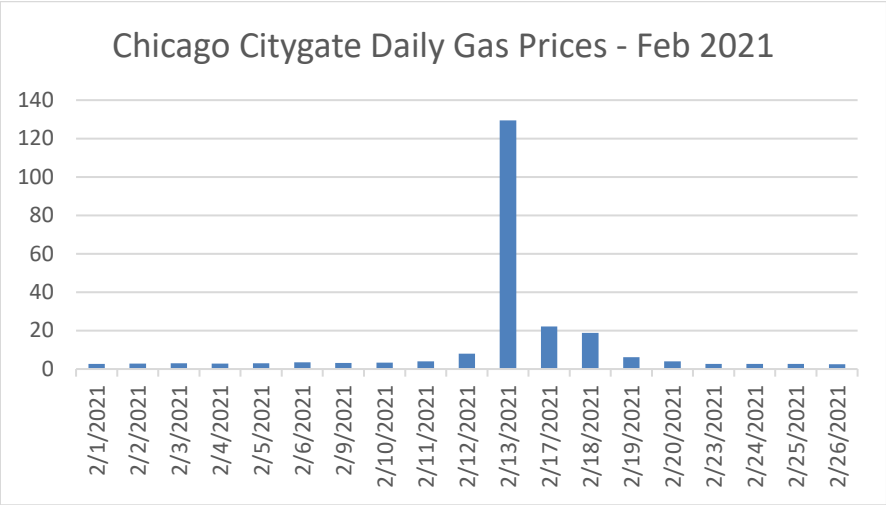
Illinois Natural Gas Competitive Market

Wholesale natural gas prices in Chicago[46] 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.

[45] Gas and power prices obtained from the Energy Information Administration (EIA).

[46] Chicago wholesale natural gas prices are reflected in the trading hub known as “Chicago Citygate”.

Figure 2 – Chicago Citygate Daily Spot Prices



Only 7.3% of gas customers in Illinois have chosen a competitive natural gas supplier.[47] 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

[47] U.S. Energy Information Administration, Natural Gas Annual 2019.

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"[48] 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;[49] 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 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.[50]

The vast majority of customers, by some accounts approximately 75%,[51] 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 customers, paid none of this increase due to a court settlement.[52] 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.

[48] https://www.thedailybeast.com/dollar5152-power-bill-texas-winter-storm-hell-only-gets-worse
[49] Figure is derived by averaging ERCOT Houston Zone LMP prices for the three Februaries prior to 2021.
[50] 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.
[51] https://www.keranews.org/news/2021-02-22/heres-what-to-expect-from-your-next-electricity-bill-in-texas
[52] Settlement takes Griddy customers off the hook for winter storm bills (statesman.com)

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[53]	$45	9,000	Bankruptcy/Distressed Sale
Constellation[54]	$800	120,558	Financial Losses
Energy Monger[55]	$7	3,756	Distressed Sale
Entrust Energy[56]	$270	63,000	Distressed Sale
GB Power[57]			Distressed Sale
Genie[58]	$13	375,000[59]	Financial Losses
Griddy[60]	$29	29,000	Bankruptcy
GridPlus Texas[61]	$1	915	Distressed Sale
Iluminar Energy[62]	$42		Distressed Sale
Just Energy[63]	$250	208,339	Bankruptcy
Liberty Power[64]	$81	25,000	Bankruptcy
NRG[65]	$967	2,900,000	Financial Losses
Pogo Energy[66]	$25	15,000	Bankruptcy
Power of Texas Holdings[67]			Bankruptcy
Pulse Power[68]	$200	100,000	Distressed Sale

[53] http://www.energychoicematters.com/stories/20210316zz.html
[54] 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.
[55] Letter from Drew Gormley to employees and brokers.
[56] 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
[57] http://www.energychoicematters.com/stories/20210505ca.html
[58] https://www.bloomberg.com/press-releases/2021-03-08/genie-energy-estimates-preliminary-impact-of-winter-storm-uri-in-texas
[59] 10,000 of these customers were in Texas.
[60] Declaration of Michael Fallquist in Support of the Debtor's Chapter 11 Petitions and First Day Relief
[61] http://www.energychoicematters.com/stories/20210505ca.html
[62] http://www.energychoicematters.com/stories/20210505ca.html
[63] https://www.wsj.com/articles/texas-energy-fallout-tips-power-retailer-just-energy-into-bankruptcy-11615307592?page=1
[64] http://www.energychoicematters.com/stories/20210421a.html
[65] https://www.nrg.com/about/newsroom/2021/39596.html
[66] http://www.energychoicematters.com/stories/20210702aa.html
[67] https://www.bankruptcyobserver.com/bankruptcy-case/POWER-OF-TEXAS-HOLDINGS
[68] https://news.yahoo.com/texas-power-crisis-could-cripple-213639203.html

Spark[69]	$65	367,000	Financial Losses
Vistra[70]	$510	2,724,000	Financial Losses
Volt Electricity Provider[71]	$1		Distressed Sale
Young Energy[72]		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 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[73]

	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%

[69] http://www.energychoicematters.com/stories/20210506b.html
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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").[74] 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 load-serving entities repay these securitized bonds through "uplift charges" assessed by ERCOT in the future.[75]

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.[76] A typical residential customer could pay an extra 51 cents per month for the next 30 years as a result of the ERCOT securitization.[77] 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

[74] 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.

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

[76] 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.

[77] 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.

a conservative benchmark. Next we removed the amount attributed to Griddy ($29.1 million) since Griddy customers were absolved from paying Uri related bills due to a court settlement.[78] We then divided this number (approximately $62 million) by the 6,451,123 residential customers with retail choice in Texas to derive an average cost per customer of $9.62. 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 $81.58. 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.[79] 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	$82
Power Utility Monopolies - Texas	$498
Gas Utility Monopolies - Texas	$351
Power Utility-Monopolies - All Uri Impacted States	$283

[78] Settlement takes Griddy customers off the hook for winter storm bills (statesman.com)
[79] Data sources provided in the Appendix section.

Gas Utility-Monopolies - All Uri Impacted States	$342

Finally, we also note that, while the focus of this paper was on residential customers, recovery extracted from businesses is also a concern that should not be dismissed. The Storm's impact on residential customers, however, should serve as an example of how businesses were also impacted.

V. Conclusions

The lessons from Winter Storm Uri are clear. Competitive markets protected consumers while utility-monopoly markets protected themselves 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 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. As such, the competitive market prevented competitive energy suppliers from increasing rates to their customers during, immediately after, or even months after the storm.

Appendix

Changes Made from Original Version

❖ Utility Requested Recovery Figures

Utility-Monopolies	State	Commodity	Requested Recovery (in $ millions)	Update Type	Recovery Source	Recovery Mechanism	Original Report Recovery Value (in $ millions)	Delta (in $ millions)
Atmos Energy	TX	Gas	$2,022.2	Recovery	Ratepayers	Securitization	$1,465.6	$556.6
CenterPoint Energy	TX	Gas	$1,100.4	Recovery	Ratepayers	Securitization	$1,141.3	($40.9)
Bluebonnet Natural Gas LLC	TX	Gas	$2.0	Added utility	Ratepayers	Securitization		
Cortix Utilties Inc	TX	Gas	$0.3	Added utility	Ratepayers	Securitization		
EPCOR Gas Texas Inc	TX	Gas	$11.3	Added utility	Ratepayers	Securitization		
SiEnergy LP	TX	Gas	$18.8	Added utility	Ratepayers	Securitization		
Universal Natural Gas Inc	TX	Gas	$32.4	Added utility	Ratepayers	Securitization		
Rayburn Country Electric Cooperative Inc	TX	Power	$908.0	Recovery	Ratepayers	Securitization	$640.5	$267.5
Texas Gas Service (One Gas Inc)	TX	Gas	$197.4	Recovery	Ratepayers	Securitization	$279.6	($82.2)
MidAm Gas	SD	Gas	$35.2	Added utility	Ratepayers	Tracker		$35.2
NorthWestern Energy - (SD)	SD	Power	$11.4	Added utility	Ratepayers	Tracker		$11.4
MDU	SD	Gas	$5.2	Added utility	Ratepayers	Tracker		$5.2
Oklahoma Natural Gas	OK	Gas	$1,284.1	Recovery	Ratepayers	Securitization	$1,371.4	($87.3)
Oklahoma Gas & Electric Co	OK	Power	$739.0	Recovery	Ratepayers	Securitization	$1,000.0	($261.0)
Public Service Co of Oklahoma	OK	Power	$675.2	Recovery	Ratepayers	Securitization	$650.0	$25.2
CenterPoint	OK	Gas	$76.1	Recovery	Ratepayers	Securitization	$79.0	($2.9)
Fort Cobb Fuel Authority	OK	Gas	$0.6	Recovery	Ratepayers	*	$0.6	($0.0)
Grand River Dam Authority (GRDA)	OK	Power	$2.7	Added utility	Ratepayers	*		$2.7
New Mexico Gas Company	NM	Gas	$110.1	Recovery	Ratepayers	*	$110.0	$0.1
Zia Gas	NM	Gas	$19.6	Recovery	Ratepayers	*	$16.7	$2.9
Raton Natural Gas	NM	Gas	$1.1	Added utility	Ratepayers	*		$1.1
El Paso Electric Co	NM	Power	$6.8	Recovery	Ratepayers	*	$1.3	$5.5
Montana-Dakota Utilities Co	ND	Power	$1.5	Added utility	Ratepayers	Tracker		$1.5
Otter Tail Power Co	ND	Power	$4.5	Added utility	Ratepayers	Tracker		$4.5
Empire Gas	MO	Gas	$31.2	Recovery	Ratepayers	Tracker	$33.8	($2.6)
Evergy Missouri West	MO	Power	$297.3	Added utility	Ratepayers	Securitization		$297.3

Liberty Midstates Natural Gas	MO	Gas	$5.5	Added utility	Ratepayers	Tracker		$5.5
Summit Natural Gas	MO	Gas	$30.7	Added utility	Ratepayers	Tracker		$30.7
CenterPoint	MN	Gas	$371.1	Recovery	Ratepayers	Deferred Accounting	$470.0	($98.9)
Northern States PWR Co	MN	Gas	$160.0	Recovery	Ratepayers	*	$215.0	($55.0)
MERC	MN	Gas	$62.0	Recovery			$75.0	($13.0)
Great Plains	MN	Gas	$8.0	Recovery	Ratepayers	*	$11.0	($3.0)
Entergy Louisiana LLC	LA	Power	$4.4	Recovery	Ratepayers	Deferred Accounting	$190.0	($185.6)
Cleco Power LLC	LA	Power	$10.1	Added utility	Ratepayers	Securitization		$10.1
Southwestern Electric Power Co	LA	Power	$51.5	Added utility	Ratepayers	Tracker		$51.5
Kansas Gas Service	KS	Gas	$65.4	Recovery	Ratepayers	Securitization	$451.0	($385.6)
Evergy Kansas Central, Inc	KS	Power	$113.1	Recovery	Ratepayers	Deferred Accounting	$153.2	($40.1)
Southern Pioneer Electric Company	KS	Power	$17.0	Recovery	Ratepayers	Deferred Accounting	$92.5	($75.5)
Atmos Energy	KS	Gas	$102.5	Recovery	Ratepayers	*	$76.7	$25.8
Liberty	IA	Gas	$0.5	Recovery	Ratepayers	Deferred Accounting	$1.2	($0.7)
Black Hills Gas	IA	Gas	$94.5	Added utility	Ratepayers	Tracker		$94.5
PUB SERVICE CO OF COLORADO	CO	Gas	$287.0	Recovery	Ratepayers	Tracker	$354.0	($67.0)
Public Service Co of Colorado	CO	Power	$509.0	Recovery	Ratepayers	Tracker	$307.1	$201.9
Black Hills Colorado Electric, LLC	CO	Power	$23.2	Recovery	Ratepayers	*	$23.1	$0.1
Atmos Energy	CO	Gas	$23.5	Recovery	Ratepayers	*	$23.1	$0.4
Colorado Natural Gas	CO	Gas	$7.1	Recovery	Ratepayers	*	$8.2	($1.1)

❖ Average Impact per Residential Customer

Entity Type	Average Impact of Winter Storm Uri per Residential Customer	Original Report Value	Delta
Power Competitive Suppliers - Texas	$82	$86	($4)
Power Utility Monopolies - Texas	$498	$373	$125
Gas Utility Monopolies - Texas	$351	$450	($99)
Power Utility-Monopolies - All Uri Impacted States	$283	$326	($43)

Gas Utility-Monopolies - All Uri Impacted States	$342	$381	($39)

❖ **Utility-Monopoly "Fixed Rates"**

The following sub-section was deleted from ***Section III Utility-Monopoly Cost Recovery Mechanisms***:

> ***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.

This subsection was removed after Oklahoma Corporation Commission's ("OCC") Public Utility Division ("PUD") pointed out that the original version of the paper incorrectly claimed that Oklahoma Gas and Electric Company ("OG&E") requested $30 million in relief for customers on Guaranteed Flat Billing ("GFB") and that shareholders paid for the losses instead.[80]

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- *APPLICATION OF FORT COBB FUEL AUTHORITY, LLC FOR APPROVAL OF SPECIAL REGULATORY TREATMENT FOR ABNORMAL GAS SUPPLY COSTS ARISING FROM EXTREME WINTER WEATHER AND WAIVER OF APPLICABLE PURCHASED GAS ADJUSTMENT TARIFFS AND RULES UNDER OAC 165:50 SPECIFYING METHODOLOGY FOR RECOVERY OF GAS SUPPLY COSTS, CAUSE NO. PUD 202100057, ORDER NO. 717507*
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- *Memorandum PU-21-104, 6/3/2021, To: Commissioners Kroshus, Fedorchak and Christmann From: Victor Schock Public Utility Analyst, Re: Montana-Dakota Utilities Co. February 2021 Extreme Cold Weather Event Investigation - Electric Case No. PU-21-104*
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The Empire District Gas Company d/b/a Liberty (Empire) Tariff Filing of the Purchased Gas Adjustment (PGA), ORDER APPROVING PGA TARIFF AND APPROVING EXTENDED RECOVERY PERIOD, File No. GR-2022-0127, Tariff No. JG-2022-0147

- *BEFORE THE PUBLIC SERVICE COMMISSION FOR THE STATE OF MISSOURI, In the Matter of the Petition of Evergy Missouri West, Inc. d/b/a Evergy Missouri West for a Financing Order Authorizing the Financing of Qualified Extraordinary Storm Costs Through an Issuance of Securitized Utility Tariff Bonds, No. EF-2022-0155*
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- *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, ORDER APPROVING UNANIMOUS SETTLEMENT AGREEMENT ON WAIVER OF THE PENALTIES UNDER KANSAS GAS SERVICE'S TARIFF*
- *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 ORDER SETTING PROCEDURAL SCHEDULE*
- *In the Matter of the Investigation into Southern Pioneer Electric Company Regarding the February 2021 Winter Weather Events, as Contemplated by Docket No. 21-GIMX-303 MIS. Docket o. 21-SPEE-331 -GIE*
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- *STATE OF IOWA DEPARTMENT OF COMMERCE UTILITIES BOARD IN RE: LIBERTY UTILITIES (MIDSTATES NATURAL GAS) CORP d/b/a LIBERTY UTILITIES, DOCKET NO. PGA-2020-0222, ORDER ADDRESSING POLAR VORTEX RECOVERY PLAN Filed with the Iowa Utilities Board on April 8, 2022, PGA-2021-0222, Attachment A, Liberty Utilities Information Concerning Recovery of Polar Vortex Costs (PVC), By Class*
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