

AMERICAN PUBLIC GAS ASSOCIATION

Preventing Impacts of Severe Cold Weather Like Winter Storm Uri*Preface*

Uri will not be the last storm to roil natural gas markets. Although diversification of supply regions has muted the impact of hurricanes—once the market’s most potent nemesis—winter storms present their own issues. In February 2021, Uri occurred nearly ten years to the day after a similar storm in the southwest that caused severe production losses, but which was shorter in duration than Uri.

Uri was an economic catastrophe, not a curtailment crisis. The price of natural gas reached unimaginable levels but actual curtailments were quite limited and few if any human needs customers lost service for any significant length of time. For example, in Texas, 99.95 percent of residential gas customers maintained their gas services.¹ Record-setting natural gas prices spiked and imposed a severe economic burden on gas utilities that had no choice but to purchase natural gas to keep the heat on in their communities beleaguered by record cold in some instances. For example, in San Antonio, Texas, on February 17, 2021, APGA member CPS Energy was charged an average price of \$386 per MMBtu, which was more than 100 times the prevailing price before the storm. During the storm CPS Energy was charged over \$685 million for natural gas. APGA member Winfield, Kansas, spent \$8.5 million on gas during the weeklong February freeze, far more than the \$200,000 it typically spends that month.²

The economic cost of the storm to consumers has been estimated at \$11 billion: economic “overcharges” of \$8 billion went to Texas electric markets and \$3 billion went to interstate gas markets according to a Bloomberg analysis. That is largely based upon the known securitization of debt of utilities, programs under which they borrow to pay their wholesale gas bills and invoice consumers over a long period of time, with interest. State governments have provided for loans to municipalities.

Autopsies of the disaster have arisen. The University of Texas Energy Institute developed a report, “The Timeline and events of the February 2021 Texas Electric Grid Blackouts,” released July 12, 2021; it concluded that there was no single cause of the crisis.³ Natural gas deliveries were lost

¹ Written testimony of the Hon. Christi Craddick, Chairman of the Railroad Commission of Texas, to the Subcommittee on Oversight and Investigations of the House Committee on Energy & Commerce (Mar. 22, 2021), *available at* https://energycommerce.house.gov/sites/democrats.energycommerce.house.gov/files/documents/Witness%20Testimony_Craddick_OI_2021.03.24.pdf.

² Matthews, Christopher M., “Far From Texas, Huge Gas Bills Stoke Anger After February Freeze,” *Wall St. Journal* (June 27, 2021) <https://www.wsj.com/articles/far-from-texas-huge-gas-bills-stoke-anger-after-february-freeze-11624786202?page=1>

³ See <https://news.utexas.edu/2021/07/13/new-data-on-february-texas-blackouts-reveals-unprecedented-impact-on-energy-and-financial-systems/> The Institute concluded that its understanding of natural gas flows during the event was “incomplete, despite having acquired and analyzed a proprietary source of natural gas data. For example, even without weather-related equipment failures, it is unknown to what level of peak flow rate and duration the Texas

for several reasons—nearly all of which had occurred before, specifically in 2011. Wellhead equipment froze (“freeze offs”). Compressor equipment froze and broke down. Gathering lines froze up in the field. Poor weather conditions increased repair times. The Electric Reliability Council of Texas (ERCOT), which operates the electric grid and manages the deregulated market for 75 percent of Texas, cut power to certain natural gas production facilities, further reducing production capacity and hindering repairs. The data indicate that natural gas output started to decline rapidly before these forced outages (load shed) began early on February 15, with production declining about 700 MMcf/d from February 8-14. Nonetheless, some of the additional 600 MMcf/d output decline from February 14-15 could be partly due to natural gas facilities residing on circuits subject to ERCOT’s load shed orders.

The City of San Antonio concluded that the Public Utility Commission of Texas (PUCT) “manipulated the electric power price on the ERCOT grid artificially inflating the cost of electric power, signaling the natural gas markets to excessively increase the cost of natural gas and irresponsibly costing the residents of Texas billions of dollars.”⁴ Many issues surrounding the Texas electric market contributed to the price crises in ways that are difficult to measure. APGA is no expert in that byzantine marketplace.

Collectively, these circumstances created scarcity conditions that caused at least one interstate pipeline (Enable Gas Transmission) to use its human needs curtailment plan for the first time. Some gas-fired electric generation and industrial end users were curtailed, but residential natural gas service had few if any interruptions in the affected states. Additionally, market conditions were worsened because the peak of the storm happened during the long President’s Day weekend. This caused natural gas schedulers to have to lock in an extra three days’ usage at record high prices.

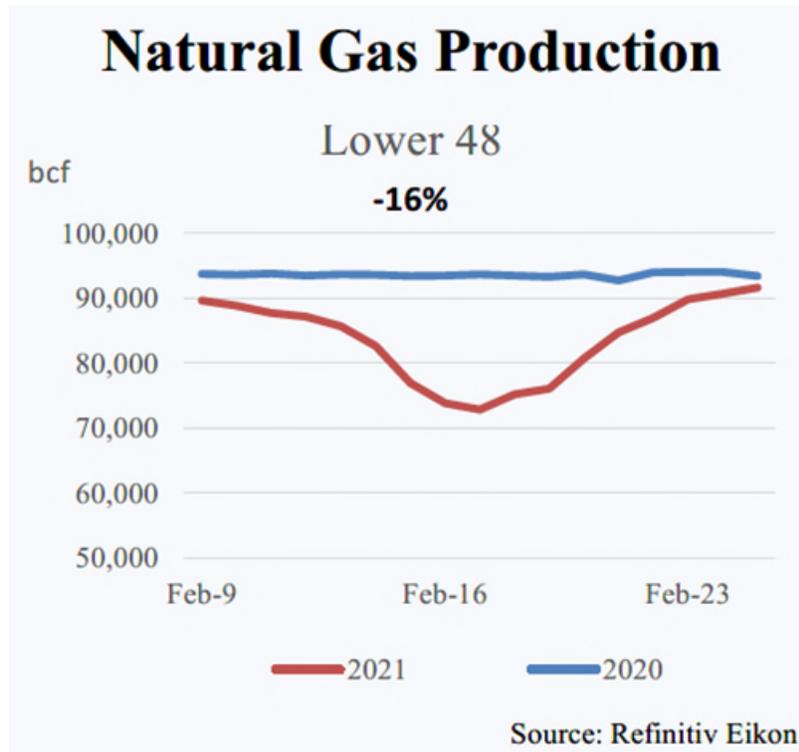
The Institute and others have compared Uri to two past events in 1989 and 2011 when the weather was more severe (but shorter in duration), concluding that the concern for reliability of gas supply

natural gas system can deliver natural gas demand to all customers during a winter event such as Winter Storm Uri. A full understanding of the hedging positions and out-of-market contractual agreements among ERCOT market participants will probably never be known given the confidentiality surrounding such agreements, thus limiting our understanding of the full economic consequences of the event. Robust estimations of the cost of better-winterizing the energy supply system will require further site-specific analysis.”

⁴ City of San Antonio Community Emergency Preparedness Committee Report: A Response to the February 2021 Winter Storm at 8 (dated: June 24, 2021).

for electric generation was addressed long ago after the 1989 event.⁵ Apparently no lessons were learned from those blackouts when the financial impacts were quite modest in comparison to Uri; natural gas prices remained fairly stable in December 1989.⁶

Uri might best be understood from this one graph presented at the Commodities Futures Trading Commission (CFTC) in May 2021:⁷



This loss of supply created a demand-supply imbalance that spiked prices. Demand was driven by record cold in many regions and the increased reliance on natural gas for electricity generation. The February storm caused wellheads and pipelines to freeze in Texas and other gas-producing

⁵ See, e.g., Energy Inst., *The Timeline of Events of the February 2021 Texas Electric Grid Blackouts*, The Univ. of Tx. at Austin (July 21, 2021).

<https://energy.utexas.edu/sites/default/files/UTAustin%20%282021%29%20EventsFebruary2021TexasBlackout%2020210714.pdf>.

⁶ *Id.* at pp. 71, 75.

⁷ <https://www.cftc.gov/PressRoom/Events/opaeventeemac060321> As a daily average over month, Texas dry natural gas production dropped from 21 in January 2021 to 13 Bcf in February 2021. <https://www.eia.gov/todayinenergy/detail.php?id=46896>.

states, crimping supplies just as millions of customers cranked up the heat. Hundreds of supply contracts had force majeure invoked and litigation has ensued with at least 40 cases pending in Texas. The effects were felt far from Texas as the interstate market relies upon these gas supplies. The impact on regions that could access the Utica and Marcellus was far, far less pronounced, a blip on their prices. Those regions include most APGA members. But many APGA members in many states will suffer the economic burden of the prices of natural gas for just those few days for years to come.

Specific Issues and Potential Remedial Steps to Address Them

1. The law (deregulation) failed to get natural gas producers to weatherize their facilities in the affected regions, especially the Permian Basin.

The CFTC graph above demonstrates the unusual natural gas supply crisis that triggered the catastrophic price increases. Much attention has now been paid to the failure by natural gas producers to weatherize systems in the south as they do in the north. Such weatherization is routine in colder climates but less so in warmer climates that do not freeze as often.

Freezing temperatures in gas production areas are not unheard of in Texas and are routine in cold climates. The “winterization” of natural gas facilities would help ensure adequate production during extreme cold weather events. Following the similar cold weather event in February 2011, recommendations for such winterization were made in Texas by the legislature and the regulators. These were not followed through on: the regulatory regime and the market failed consumers.

How can this be changed? Natural gas extraction and production are regulated by the states, which have various government agencies and commissions that are responsible for regulating the oil and gas industries within their borders. Therefore, under the current regulatory framework, the most direct path to compel weatherization is for an entity like the Oklahoma Corporation Commission Oil and Gas Division or Texas Railroad Commission to set a weatherization standard (which it declined to do after 2011).⁸

After Uri, the Texas legislature passed Senate Bill 3, which the governor signed in June 2021. The law directed the PUCT to commence a process to adopt rules requiring weatherization of gas facilities. Arguably, had such rules existed and been followed, the crisis of Uri *could* have been much diminished.

Will new Texas regulations have “teeth”? Will they be enforced?

- Specifically, the new law requires the PUCT to create a rule requiring “an operator of a gas supply chain facility that experiences repeated weather-related or major weather-related forced interruptions of production to: (1)

⁸ See, e.g., Texas Administrative Code, Title 16, Part 1 Section 3.13 “Casing, Cementing, Drilling, Well Control, and Completion Requirements.”

contract with a person who is not an employee of the operator to assess the operator's weatherization plans, procedures, and operations; and (2) submit the assessment to the commission.” Subchapter C, Chapter 86, Natural Resources Code, was amended by adding this Section 86.044(f). Whether that text will prove efficient and effective will play out in the rulemaking process in Texas and its aftermath.

A nationwide approach would involve federal legislation requiring entities that own or operate facilities used for producing, gathering, or processing natural gas for sale in interstate commerce to ensure reliability of facilities. The legislation could require, for example, that entities subject to the provisions ensure that facilities are designed, built, and operated so as to be operable under the peak weather conditions that have been experienced in the region at any time during the past 20 years (inclusive of excessive heat, excessive cold, high winds, excessive moisture and other historic or foreseeable weather patterns). Alternatively, legislation could delegate responsibility for designing specific weatherization standards to a federal agency. Such legislation could amend the U.S. Code provisions pertaining to the U.S. Department of Interior’s (DOI) management of oil and natural gas resources and create a new department within DOI to supervise and enforce compliance with weatherization requirements. Even the proposal of federal legislation could encourage state regulators to pursue weatherization requirements more vigorously and/or persuade industry to accept more state regulation.

Examples to incentivize weatherization may include free-market mechanisms. Tax credits traditionally have been used as an incentive. For example, a credit could be set to cover some or all of the cost to weatherize facilities. Another incentive approach could be to seek voluntary surcharges in wholesale natural gas transactions (e.g., in the North American Energy Standards Board (NAESB) Base Contract template, add a weatherization surcharge to the natural gas price). This option would allow marketers to deliver the proceeds to state regulators to administer similar to the way APGA members voluntarily contribute to Gas Technology Institute (GTI), and states could use the fund to reimburse facility owners who demonstrate they have added the appropriate equipment.

2. Existing law did not protect APGA member systems from paying unconscionable spot prices for natural gas.

The entire panoply of reasons for high prices drove the unregulated spot market over the course of a few days from around \$2.50/MMBtu to 100x, 200x, 300x that price all the way up to over \$1,100/MMBtu in Oklahoma. The CFTC staff determined that there was no manipulation to create those price levels: it was the free market at work.

Evidence strongly suggests that the market was not functioning as efficiently as the CFTC may have concluded. There does not appear to be any evidence to suggest that another \$200/MMBtu would have created more gas production at that time when it was desperately needed. Instead, gas supplies disappeared regardless of price for a variety of reasons. *Was the market functional or dysfunctional then? Were the prices just?*

The financial impact of such prices during the cold snap was dramatic for local distribution companies (LDCs) including many APGA members. For the most part, these debts (in the billions across many states) have been securitized: bonds and other debt instruments have been issued so that cash is available to pay suppliers. Consumers will pay this debt over time. Thus, there will be a great wealth transfer from APGA members and their customers (and millions of other consumers) to gas sellers. This economic burden has stressed smaller APGA systems to the breaking point as their financial reserves were drained to pay their wholesale energy bill. A similar economic shock in the future could break them.

Some 33 states employ price gouging laws in times of weather emergency to prevent price gouging in other, but similar commodity markets. A gasoline station operator charging 300x yesterday's price of gasoline in a hurricane evacuation is subject to prosecution. It is not clear that any of these state laws apply to the sale of natural gas in interstate commerce. Litigants will test that proposition in state and federal courts.

There is no federal price protection for wholesale natural gas consumers in a weather emergency. Congress has authority to regulate interstate commerce but deregulated the first sale of natural gas. New legislation would be required to address the issue.

When Congress set natural gas price deregulation into motion in the Natural Gas Policy Act of 1978 (NGPA), it gave the President (or his delegate) certain emergency powers over the market that have since been exercised only one time. APGA and American Public Power Association (APPA) asked President Biden to exercise this power again in February 2021 without response. Also, the precise authority to protect consumers from the economic catastrophe of the natural gas price spike did not exist in the statute: current law allows the President of the United States to declare a "gas supply emergency" and *allocate supplies*, but that would not have addressed the situation that arose during Winter Storm Uri.

Congress could amend the NGPA to supplement presidential authority in a natural gas emergency to cap natural gas prices. Specifically, section 301 of the NGPA (15 U.S.C. § 3461) could be amended to give the President of the United States authority to declare a "natural gas *price* emergency." A proposed new section of the NGPA would give the President or his or her delegate the authority to cap the price of natural gas that may be sold during the days of a declared price emergency. See Appendix 1.

It has been reported that lawmakers and regulators in affected states like Minnesota, Oklahoma, Missouri, Arkansas and Kansas are exploring regulatory changes. For example, Garry Mize, a Republican who is chairman of the utilities committee in Oklahoma's House of Representatives put it this way: "I cannot for the life of me understand how we saw it go from \$2 to \$1,200 and back down to \$2 in the span of the week; that's not real. It's hard on a political level because you'd like to believe that free markets work all the time." He told the *Wall St. Journal* that the U.S. Congress might need to consider additional changes to prevent runaway prices, such as setting a federal cap or creating a market circuit breaker, akin to what stock exchanges use to halt irregular trading.⁹ At the same time, natural gas

⁹ See note 1 above.

price deregulation is viewed generally as a very successful mode of pricing as abundant low-cost supplies have been added to the domestic energy reserves. Changing pricing even for only emergencies would be unpopular in the industry generally. Concerns about commercial complexity and the impact on derivatives will come to the fore as well.

3. Other Regulatory Failures

a. Unconscionable Pipeline Penalties Resulted From High Prices

Pipeline penalties, including those resulting from certain storage withdraws, flow from interstate pipeline tariffs keyed to index prices, so unbelievably high natural gas prices yield unbelievable pipeline penalties based on daily index prices. El Paso Natural Gas invoiced some \$192 million in penalties. Panhandle Eastern Pipeline had some \$121 million in penalties. Southern Star did not invoice what could have been \$158 million in penalties.

These penalty levels were not the product of large quantities of gas out of balance but from the price applied to each unit out of balance.

The Federal Energy Regulatory Commission (FERC) has approved tariffs for interstate pipelines that include penalties that in every instance (or nearly every instance) are a function of a natural gas index price. For example, on the Southern Star pipeline, the penalty for failure to comply with the terms of an Operational Flow Order (OFO) is the greater of \$10.00 or 5 times the average Gas Daily Index for Southern Star for the days of noncompliance for each Dth. On February 17, 2021, that index was \$622.785/Dth, yielding a per Dth penalty charge of \$3,113.93. FERC has approved the “higher of” approach for the obvious reason that shipper conduct is influenced by the price of gas. Originally, penalties were fixed, e.g., \$10, but if gas was spiking at \$15, the shipper would take the less costly penalty. But the historic prices seen in Uri made a mockery of this approach. Shippers were taking every reasonable action to keep in balance with these pipelines so the addition of penalties was doing nothing to influence behavior to correct the imbalances. FERC has granted pipeline requests to waive penalties incurred during Winter Storm Uri, but a more permanent fix would help insulate pipeline customers against potentially exorbitant penalties.

The City of Mesa and the City of Las Cruces filed a complaint against El Paso Natural Gas Company when it refused to waive Uri penalties. Las Cruces explained that its penalties if billed pro rata to residential customers amounted to \$128 per household. On June 17, 2021, the pipeline relented and asked FERC for authority to waive the penalties. FERC found that the pipeline would not be creating incentives for non-compliance if it waives the penalties because it “maintains that

the waiver of penalties and associated interest is appropriate on a one-time basis for these specific circumstances.”¹⁰

FERC’s process of handling penalty waivers worked ultimately in this case, but the processing of such waivers can take time. FERC could waive all penalties on its own motion to avoid pipeline filings. In this scenario, pipeline customers would not have to file complaints to get excessive penalties waived. FERC could also establish a mechanism for excessive penalties to be evaluated and waived in a timely manner. However, the mechanism should be done after the fact to make sure shippers are doing all they can to stay in balance.

FERC could avoid waiver requests if penalties were not unconscionable in the first place. FERC could adopt regulations capping interstate natural gas pipeline penalty charge rates for spot prices, *e.g.*, \$100 or an amount relative to the first-of-month (FOM) index price, *e.g.*, no more than 50x.

b. Reliability Initiatives for the Natural Gas Industry

The North American Electric Reliability Corporation (NERC) is a not-for-profit international regulatory authority whose mission is to assure the effective and efficient reduction of risks to the reliability and security of the grid. An option is a “NERC for gas production,” as there is no parallel on the gas side and PHMSA focuses on safety. If a national entity was empowered to make natural gas production more reliable, wells would likely be weatherized.

In a similar vein, APGA could propose an initiative like the “Differentiated Gas Initiative” but limit the differentiation to whether gas is reliable – based primarily on whether its production is “weatherized.” GTI recently launched a “Differentiated Gas Initiative” designed to accelerate the growing role of emissions-based differentiation in natural gas. Differentiated gas has a verified minimized emissions footprint sometimes referred to as “certified,” “responsible” or “green.” The basic criteria is the amount of methane emissions generated in its production and transportation. Others including The ONE Future Coalition term this responsibly sourced natural gas or RSG.

A similar model based upon reliability is a potential. By placing a market premium on weatherization of production, producers may be encouraged to invest in upgrades. It may also be possible to supplement the ongoing efforts focused on emissions to add reliability.

c. Address Additional Supply Chain Vulnerabilities

With the shift away from natural gas-powered compressors towards electric powered compressors in the Permian Basin (due to clean air regulations), additional

¹⁰ *El Paso Natural Gas Company, L.L.C.*, 176 FERC ¶ 61,084 at P24 (2021).

vulnerabilities were left on the gas production system due to lack of coordination between producers/pipelines and the grid operator. Additionally, various natural gas production, gathering and compression facilities were included in the voluntary curtailment programs instituted by the grid operator. The curtailment of electric-powered compression and processing facilities heavily exacerbated the loss of production capacity which was already strained due to freeze-offs.

The grid operator must coordinate with producers and pipelines going forward to ensure that during any future events involving the loss of power supplies and natural gas production that natural gas production, gathering, and compression facilities are insulated from any electric curtailments that only worsen the situation.