The ERCOT Market's Cap and the Power Grid's Long Winter's Nap: Recommended Improvements to Texas's System-Wide Price-Capping Methodology

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Introduction

In February of 2021, Winter Storm Uri devastated thousands of Texas communities already reeling from a global pandemic.[1] The state's utility infrastructure, which is well-adapted to the Texas summer heat, was instead

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1. Christopher Flavelle, Brad Plumer & Hiroko Tabuchi, *Texas Blackouts Point to Coast-to-Coast Crises Waiting to Happen*, N.Y. TIMES, https://www.nytimes.com/2021/02/20/climate/united-states-infrastructure-storms.html [https://perma.cc/7JBP-UDPR] (Feb. 21, 2021).

met with prolonged frigid temperatures and inclement winter weather.[2] Those conditions crippled electrical production while demand spiked uncontrollably, resulting in forced blackouts and exorbitant wholesale prices.[3] In the days and weeks that followed, the state's independent power grid gradually limped back into service as the weather regressed to a temperate mean. However, a political storm soon followed in which civic leaders quickly discovered that Texans' frustrations would not thaw nearly as quickly as had their extremities.

Texans' faith in their supposedly mighty, independent energy grid, reinforced by years of political and cultural indoctrination, was instantly shaken. After all, "[i]n Texas, energy regulation is as much a matter of philosophy as policy," and the "independent power grid is a point of pride that has been an applause line in Texas political speeches for decades."[4] Naturally, a fierce debate erupted in the storm's aftermath regarding the causes of the statewide power emergency and what measures, if any, would be necessary to prevent similar system failures in the future.

Moreover, experts disputed how best to address a secondary issue—the failure of the existing wholesale price-capping mechanisms to protect consumers from egregious costs. In this Note, I will intentionally limit my analysis to this secondary, yet critical, issue.

I will begin by explaining what role the Electric Reliability Council of Texas (ERCOT) plays in managing Texas's energy grid and the state's electricity marketplace. I will then suggest that Texas's price-capping rules circa February 2021 were not sufficient to achieve their intended purpose, and moreover, the handful of changes made since have done little to resolve the underlying issue. I will then discuss the immediate need for lawmakers and regulators to further amend the state's price-capping rules in order to account for rapidly evolving environmental, economic, and legal realities. Lastly, I will suggest that Texas adopt marginally more sophisticated price-capping rules to ensure the integrity of the state's electricity marketplace regardless of what challenges may ensue.

In short, I will posit that Texas's existing price-capping rules would not sufficiently ensure fair and efficient pricing in the event of another prolonged statewide power emergency. I ultimately recommend two possible alternative price-capping mechanisms that would better achieve regulators'

2. Camila Domonoske, *No, the Blackouts in Texas Weren't Caused by Renewables. Here's What Really Happened*, NPR (Feb. 18, 2021, 3:11 PM), https://www.npr.org/sections/live-updates-winter-storms-2021/2021/02/18/968967137/no-the-blackouts-in-texas-werent-caused-by-renewables-heres-what-really-happened [https://perma.cc/W89N-KSJT].

3. *Id.*; *see infra* note 52 and accompanying text.

4. Clifford Krauss, Manny Fernandez, Ivan Penn & Rick Rojas, *How Texas' Drive for Energy Independence Set It Up for Disaster*, N.Y. TIMES, https://www.nytimes.com/2021/02/21/us/texas-electricity-ercot-blackouts.html [https://perma.cc/J5RF-575T] (May 13, 2021).

aims: an "event" price-capping technique and a "seasonal" price-capping technique.

I. The Electric Reliability Council of Texas (ERCOT)

Since the advent of electricity, utilities have linked together to form larger and more complex networks. As those networks grew and developed, Texas (in characteristic fashion) refused to interconnect across state lines in order to avoid federal regulation.[5] This resulted in the eventual establishment of just "three grids in the Lower 48 states: the Eastern Interconnection, the Western Interconnection—and Texas. The Texas grid is called ERCOT, and it is run by an agency of the same name—the Electric Reliability Council of Texas."[6]

ERCOT is the entity charged with managing about ninety percent of Texas's electric load.[7] ERCOT is an independent system operator[8] that "schedules power on an electric grid that connects more than 52,700+ miles of transmission lines and 1,030+ generation units, including Private Use Networks."[9] ERCOT is not a formal state agency, but rather "a membership-based 501(c)(4) nonprofit corporation, governed by a board of directors and subject to oversight by the Public Utility Commission of Texas and the Texas Legislature."[10]

> As an Independent System Operator, ERCOT doesn't own the assets nor does it make electricity. Instead, it monitors all the moving parts that keep electricity flowing from power creators—like companies that run wind turbines and natural gas plants—into Texans' homes and businesses. It acts like a broker between wholesale power buyers and sellers to achieve that. Distribution companies that send power to those homes and businesses (think Oncor) get their electricity from the transmission system, which is what ERCOT manages from its

5. Kate Galbraith, *Texplainer: Why Does Texas Have Its Own Power Grid?*, TEX. TRIB., https://www.texastribune.org/2011/02/08/texplainer-why-does-texas-have-its-own-power-grid/ [https://perma.cc/8QY6-DDJ4] (Feb. 15, 2021).

6. *Id.*

7. *About ERCOT*, ERCOT, https://www.ercot.com/about [https://perma.cc/NJT3-U987] ("The Electric Reliability Council of Texas (ERCOT) manages the flow of electric power to more than 26 million Texas customers—representing about 90 percent of the state's electric load.").

8. An independent system operator is an "independent, federally regulated entity established to coordinate regional transmission . . . and ensure the safety and reliability of the electric system." *Glossary: Independent System Operator*, U.S. ENERGY INFO. ADMIN., https://www.eia.gov/tools/glossary/index.php?id=Independent%20system%20operator%20(ISO) [https://perma.cc/4TEH-28YQ].

9. ERCOT, *supra* note 7.

10. *Id.* ("[ERCOT's] members include consumers, cooperatives, generators, power marketers, retail electric providers, investor-owned electric utilities, transmission and distribution providers and municipally owned electric utilities.").

control room. ERCOT is responsible for overseeing that transmission across the grid.[11]

ERCOT has four primary responsibilities: (1) maintain system reliability, (2) facilitate a competitive wholesale market, (3) facilitate a competitive retail market, and (4) ensure open access to transmission.[12] ERCOT's stated mission is to "serve the public by ensuring a reliable grid, efficient electricity markets, open access and retail choice."[13]

II. Texas's Power Grid and Wholesale Electricity Marketplace

Unlike water and natural gas, electrical power cannot presently be stored away for later use on a massive, utility scale.[14] "Instead, electricity must constantly be produced, and is almost instantaneously consumed."[15] This limitation necessitates the presence of a centralized entity to schedule and manage the flow of electricity across the entire network (i.e., to regulate "power dispatch").[16] In Texas, ERCOT is charged with ensuring the reliable flow of electricity from producers to consumers—an effort that requires continuous, system-wide monitoring every minute of every day.[17]

At all times, ERCOT must balance supply and demand to maintain a transmission frequency of 60 hertz.[18] When supply exceeds demand, that frequency accelerates, and if untended, eventually results in massive blackouts and damage to critical infrastructure.[19] "Because of the way the grid is managed in Texas, though, that 'speeding up' is unlikely. ERCOT really worries about the opposite: People using more electricity than the state

11. Jennifer Prohov, *FAQ: ERCOT and the Texas Power Grid*, WFAA, https://www.wfaa.com/article/news/local/texas/faq-ercot-texas-power-grid/287-9b3514af-8ad2-49b5-aa35-1b6bb238b47e [https://perma.cc/576U-T7EG] (June 15, 2021, 5:18 PM).

12. *Fact Sheet*, ERCOT (Nov. 2021), https://www.ercot.com/files/docs/2021/11/23/ERCOT%20Fact%20Sheet.pdf [https://perma.cc/6ZHN-HUCG].

13. *Vision and Mission*, ERCOT, https://www.ercot.com/about/profile/vision [https://perma.cc/362D-5D3A].

14. *See* Am. Lung Ass'n v. EPA, 985 F.3d 914, 932 (D.C. Cir. 2021) ("[A]t least as of now, this highly demanded product [electricity] cannot be effectively stored at scale after it is created."), *rev'd sub nom.* West Virginia v. EPA, 142 S. Ct. 2587 (2022).

15. *Id.*

16. *See* Mary Pressler, *Who Is ERCOT?*, QUICK ELECTRICITY, https://quickelectricity.com/what-is-ercot/ [https://perma.cc/Y3AG-BMEB] (May 22, 2022) ("A key responsibility of ERCOT is power dispatch: scheduling and managing how electricity will flow through the network." (emphasis omitted)).

17. *See id.* (explaining that ERCOT schedules and manages electricity flow on a daily basis).

18. Mose Buchele, *What Led Zeppelin Can Teach Us About the Electric Grid in Texas*, KUT (June 26, 2019, 5:38 AM), https://www.kut.org/energy-environment/2019-06-26/what-led-zeppelin-can-teach-us-about-the-electric-grid-in-texas [https://perma.cc/GK6W-TE34].

19. *Id.*

has available. That would slow the [frequency] down, which would likewise create the risk of a grid-wide blackout."[20]

This is precisely the nightmare scenario that ERCOT faced in February 2021. "As natural gas fired plants, utility scale wind power and coal plants tripped offline due to the extreme cold brought by the winter storm, the amount of power supplied to the grid to be distributed across the state fell rapidly."[21] Simultaneously, "demand was increasing as consumers and businesses turned up the heat and stayed inside to avoid the weather."[22] The result was immediate and dangerous—as statewide electrical demand soared relative to the available supply, the transmission frequency hurtled further and further from 60 hertz.

At first, ERCOT attempted to respond by mandating rolling blackouts to curb statewide demand.[23] When that failed to sufficiently address the market disparity, ERCOT was forced to explore drastic alternatives to avoid a "worst case scenario"—one in which the "[d]emand for power outstrips the supply of power generation available on the grid, causing equipment to catch fire, substations to blow and power lines to go down."[24] Moreover, the expert consensus is that such a "worst case scenario" would result in not only immediate physical damage to transmission infrastructure but also months-long outages that would leave Texas in an "indeterminately long crisis."[25] In other words, as bad as the crisis was, "the fact that it wasn't worse is because of those grid operators."[26]

In an emergency, ERCOT has several drastic measures it can take to balance the supply and demand equation:

> Grid operators can call on other grids for help—Texas' grid has limited connections to the eastern U.S. and Mexico. But [during Winter Storm Uri], so much power went offline that other grids couldn't close the gap, in part because those grids were being stressed by the same storm. Next, ERCOT can try to reduce demand by interrupting power to large industrial customers that have previously agreed to have power cut during an emergency. If that doesn't work—and it didn't [during Winter Storm Uri]—ERCOT has a last resort

20. *Id.*

21. Erin Douglas, *Texas Was "Seconds and Minutes" Away from Catastrophic Monthslong Blackouts, Officials Say*, TEX. TRIB., https://www.texastribune.org/2021/02/18/texas-power-outages-ercot/ [https://perma.cc/WV9J-BE44] (Feb. 18, 2021, 6:00 PM).

22. *Id.*

23. *Id.*

24. *Id.*

25. *Id.* (internal quotation marks omitted).

26. *Id.* (internal quotation marks omitted).

> option: ordering transmission companies to reduce demand on the system with rotating outages for customers.[27]

The storm's devastation was so widespread and prolonged, however, that none of these measures (alone or in tandem) did much in the short term to restore power to the millions of Texans who were fighting to stay warm.

In addition to scheduling and managing power delivery, ERCOT is also responsible for administering the wholesale electricity market in Texas.[28] Although the aforementioned emergency procedures *may* be employed to balance supply and demand, in most circumstances ERCOT relies on a hyper-effective and beautifully simple balancing tool to manipulate electrical production and consumption—the wholesale price of electricity.

ERCOT functions as a clearinghouse that "centrally coordinates transactions between competitive wholesale power buyers and sellers . . . by collecting money from companies that consume power and paying the resources that produce the power."[29] Buyers and sellers are typically empowered to bilaterally contract at prices they deem appropriate without involving ERCOT.[30] Thereafter, "[t]he energy trades are presented to ERCOT for settlement. To the extent a buyer does not procure enough energy bilaterally via energy trades to meet its energy obligation, ERCOT administers a Day-Ahead Market and a Real-Time Market for energy."[31]

Texas's current market structure and pricing methodology are largely the brainchild of Professor William Hogan, an energy policy professor at the Harvard Kennedy School.[32] Fundamentally, the idea is that the lowest-cost producers (utility-scale wind and solar) come online whenever they can, practically independent of the wholesale price of electricity.[33] Thereafter, the

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27. *Id.*

28. *See* Mitchell Ferman & Shawn Mulcahy, *Experts Fear Reversing Electricity Prices from Winter Storm Could Make Things Worse*, TEX. TRIB., https://www.texastribune.org/2021/03/19/texas-electricity-prices-winter-storm/ [https://perma.cc/QTC7-ZT3X] (Mar. 19, 2021, 6:00 PM) ("The Electric Reliability Council of Texas manages the state's power grid and controls the prices power generators charge to retail electric providers, such as power companies and city utilities."); *see also* Pressler, *supra* note 16 ("In addition to ensuring power delivery, ERCOT operates the electricity market in Texas, performing financial settlements for sellers and buyers." (emphasis omitted)).

29. Jackie Benton, *ERCOT's Role: Keeping the Lights on in Texas*, TEX. COMPTROLLER OF PUB. ACCTS.: FISCAL NOTES (Aug. 2020), https://comptroller.texas.gov/economy/fiscal-notes/2020/august/ogelman.php [https://perma.cc/2RKF-KSJH].

30. *Id.*

31. *Id.*

32. Raquel Coronell Uribe & Isabel G. Skomro, *Kennedy School Professor Who Designed Texas's Energy Market Defends Skyrocketing Prices Following Winter Storm*, HARV. CRIMSON (Feb. 26, 2021), https://www.thecrimson.com/article/2021/2/26/hogan-texas-energy-prices/ [https://perma.cc/FN3D-X7C9].

33. *See* FRANCISCO FLORES-ESPINO, TIAN TIAN, ILYA CHERNYAKHOVSKIY, MEGAN MERCER & MACKAY MILLER, U.S. DEP'T OF ENERGY: NAT'L RENEWABLE ENERGY LAB'Y, COMPETITIVE

gradually higher-marginal-cost producers (nuclear plants, natural gas plants, coal plants, etc.) come online discretionarily until the market reaches equilibrium.[34] "Arranging all the supply offers in ascending order of marginal cost renders a supply curve, also known as [a] generation stack or dispatch curve."[35] Under ideal conditions, "lower-cost units [are] dispatched first and dispatched generators [are] paid at a rate that reflects the cost to serve the next increment of load (i.e., the marginal price)."[36]

In other words, so long as ERCOT can facilitate market participation such that supply and demand converge to market equilibrium, no further intervention on its part is necessary. All the while, Texas's consumers benefit from an extremely economically efficient model that mitigates the retail price of electricity.

A. Texas's Price-Capping Rules—Past & Present

The simplistic beauty of Texas's pricing methodology is best realized under normal pricing conditions. However, under abnormal pricing conditions, various fail-safe protocols are required to ensure grid reliability and market integrity, which has resulted in the implementation of operating reserves and scarcity-pricing rules.

An operating reserve is exactly what it sounds like—it is a requirement that statewide supply exceed statewide demand by a margin significant enough to ensure continued delivery of electricity to consumers even in the event of a major disruption.[37] Scarcity pricing is also exactly what it sounds like—a collection of rules that govern wholesale prices when the statewide supply is stretched thin.[38] In a report from 2013, Professor Hogan explained scarcity pricing as follows:

> When there is excess available capacity, competitive pressure should drive the electricity market-clearing energy price to the variable opportunity cost of the most expensive generator running. Simultaneous consideration in the economic dispatch should produce

ELECTRICITY MARKET REGULATION IN THE UNITED STATES: A PRIMER 12 (2016), https://www.nrel.gov/docs/fy17osti/67106.pdf [https://perma.cc/4C44-28FU] ("The goal of wholesale electricity markets is to produce a least-cost economic dispatch of generation resources that meets demand and ensures system reliability.").

34. *See id.* (theorizing a model power dispatch curve in which lower-cost units are dispatched to meet demand prior to higher-cost units).

35. *Id.*

36. *Id.*

37. ERIC HIRST & BRENDAN KIRBY, U.S. DEP'T OF ENERGY: OAK RIDGE NAT'L LAB'Y, ANCILLARY-SERVICE DETAILS: OPERATING RESERVES 2 (1997), https://www.osti.gov/servlets/purl/614919-cH6ZeT/webviewable/ [https://perma.cc/8MWV-DQ2A].

38. NRG Editorial Voices, *What Texas Businesses Need to Know About Scarcity Pricing This Summer*, NRG (Apr. 5, 2018), https://www.nrg.com/insights/energy-education/what-texas-businesses-need-to-know-about-scarcity-pricing-this-s.html [https://perma.cc/WV7M-H7H2].

> compatible prices for ancillary services, with little or no value for additional capacity. This is the commonplace rule that animates most discussion about normal pricing conditions. However, when generating capacity becomes scarce it should become valuable. The price for operating reserve capacity should rise to reflect the scarcity conditions. The corresponding price for energy should increase to reflect this opportunity cost of reserve scarcity. This scarcity pricing could and should produce a large increase in prices under scarcity conditions, providing better incentives at just the right time when and where capacity would be especially needed.[39]

The basic premise is simple enough. Under normal circumstances, competitive forces drive prices down. As long as there is excess production capacity available, the only thing keeping more electricity out of the marketplace at any given time is the wholesale price. On the hottest day of a typical Texas summer, ubiquitous air conditioning sends electrical demand into the stratosphere. Likewise, the bitter cold of a winter storm can cripple generators and send demand soaring as consumers warm their homes. In both circumstances, higher-cost producers (i.e., thermal) must almost always be the ones to close the supply–demand gap.

While higher-cost producers are entirely necessary to ensure grid reliability and deserve to be compensated for the important role they play, the wholesale price cannot be allowed to perfectly scale with the market in all circumstances. In rare instances when statewide supply is completely eclipsed by demand, a perfect scaling would result in unconscionable prices. Lawmakers and regulators, with these realities in mind, have endeavored to establish reasonable maximum prices that can be charged per megawatt-hour of electricity in the ERCOT market at any given time.

These "system-wide offer caps," as well as other rules pertaining to scarcity pricing, are codified in Title 16 of the Texas Administrative Code (TAC).[40] Section 25.509(b)(6) establishes both a "low system-wide offer cap (LCAP)" and a "high system-wide offer cap (HCAP)."[41] At the beginning of each new calendar year, the system-wide offer cap is set equal to the present HCAP of $5,000/MWh.[42] The system-wide offer cap remains there until certain year-to-date market conditions are met; then, the cap is reduced and set equal to the present LCAP of $2,000/MWh.[43]

39. William W. Hogan, *Electricity Scarcity Pricing Through Operating Reserves*, ECON. ENERGY & ENV'T. POL'Y., Sept. 2013, at 65, 66–67.

40. 16 TEX. ADMIN. CODE § 25.509 (2022) (Pub. Util. Comm'n of Tex., Scarcity Pricing Mechanism).

41. *Id.* § 25.509(b)(6).

42. *Id.*

43. *Id.*

In February 2021, the HCAP was set at $9,000/MWh, and the LCAP was calculated as *either* $2,000/MWh *or* fifty times the natural gas price index value, *whichever was higher*.[44] In the aftermath of Winter Storm Uri, regulators amended the TAC to lower the HCAP from $9,000/MWh to $5,000/MWh;[45] they also amended the TAC to decouple the LCAP from the price of natural gas.[46] The latter of these changes was a sensible and effective response to a fundamental flaw in the price-capping methodology. The former, however, does little—if anything—to address the underlying problem it purports to resolve.

III. Winter Storm Uri

Winter Storm Uri was such a catastrophic force of nature that, among Texans, it earned the colloquial title "Snowmageddon."[47] For nearly a week, record-cold temperatures and various forms of freezing precipitation exacted a horrible toll on Texas and its citizens.[48] While any holistic approximation of the damage inevitably falls short, several individual statistics help to quantify the sheer magnitude of this disaster.

First and foremost, at least 210 Texans tragically perished as a result of Winter Storm Uri.[49] Reporting by the Texas Department of State Health Services suggests that most of those fatalities were attributable to "hypothermia, vehicle crashes, carbon monoxide poisoning and chronic medical conditions complicated by the storm."[50] Second, "early estimates of the storm's economic toll . . . range[d] from $80 billion to $130 billion—the result of power loss, physical infrastructure damage and forgone economic opportunities."[51] And finally, the total charges stemming from prolonged electrical procurement at the forced $9,000/MWh price point amounted to a sum in the tens of billions—at least $16 billion of which has been contested

44. Andrew Moore, *Texas Public Utility Commission Rule Aimed to Lower Power Costs, But Made Things Worse Instead*, KCEN-TV, https://www.kcentv.com/article/news/local/a-texas-public-utility-commission-rule-designed-to-lower-power-costs-made-things-worse-instead/500-c190de6e-e775-4ece-abac-9349cfef529d [https://perma.cc/E8BK-SJH6] (May 6, 2021, 9:03 PM).

45. Paul Ring, *In Market Notice, ERCOT Notes Impact on Power Balance Penalty Curve from Texas PUC Order Lowering High Cap*, ENERGY CHOICE MATTERS (Dec. 7, 2021), http://www.energychoicematters.com/stories/20211207g.html [https://perma.cc/KP95-ECPJ].

46. Moore, *supra* note 44.

47. Louie Bond, *Snow-Mageddon: Looking Back at Winter Storm Uri, One Year Later.*, TEX. PARKS & WILDLIFE (Jan.–Feb. 2022), https://tpwmagazine.com/archive/2022/jan/ed_3_snowmageddon/index.phtml [https://perma.cc/FD2B-3PNE].

48. *Valentine's Week Winter Outbreak 2021: Snow, Ice, & Record Cold*, NAT'L WEATHER SERV., https://www.weather.gov/hgx/2021ValentineStorm [https://perma.cc/L3VF-TREM].

49. Jess Donald, *Winter Storm Uri 2021: The Economic Impact of the Storm*, TEX. COMPTROLLER OF PUB. ACCTS.: FISCAL NOTES (Oct. 2021), https://comptroller.texas.gov/economy/fiscal-notes/2021/oct/winter-storm-impact.php [https://perma.cc/NMV9-J9F3].

50. *Id.*

51. *Id.*

on the basis of administrative error and all of which has been contested as a fundamental betrayal of the price-capping mechanisms' stated purposes.[52]

Theoretically, price caps of this sort are established to "ensure prices remain affordable" and to "lessen the financial risk to customers during scarcity events."[53] Yet price caps need to be set high enough that the possible financial gains during scarcity events are enough to incentivize new investment in essential generating entities. Price caps, in tandem with operating reserves, represent a balancing of interests that afford increased reliability and adaptability when markets are intermittently pushed to their limits. Rudimentary price caps are useless, however, when markets are pushed past their limits and collapse entirely. Price caps in particular do not address the "real-time reliability problems that arise under shortage conditions."[54] Only "to the extent that system operators turn to other out-of-market interventions to address reliability issues" are consumers protected from "higher prices despite the high offer cap."[55]

During Winter Storm Uri, the existing price-capping mechanisms offered laughably inadequate protection from the financial risks associated with *prolonged* scarcity pricing. At the beginning of the crisis, in a panicked effort to incentivize production and mitigate demand, the Public Utility Commission (PUC or PUCT) scrambled for possible solutions—then (in the absence of thoughtfully developed alternatives) picked the wrong tool for the job:

> [T]he PUCT issued two orders under Project 51617 that impacted ERCOT electricity market pricing. The first order determined that prices during the load shedding that began on February 15 were not reflective of scarcity in the market, because prices were clearing below the system-wide offer cap of $9,000/MWh. The Commission asserted that this outcome was inconsistent with the fundamental design of the ERCOT market. Energy prices should reflect scarcity of the supply. If customer load is being shed, scarcity is at its maximum,

52. Ferman & Mulcahy, *supra* note 28 (reporting that "[a]n independent market monitor [had] found that ERCOT erred in keeping the $9,000 cap in place" which resulted in, "$16 billion in unnecessary charges to power companies and others"); *see also* Mark Curriden, *Did PUC Go Too Far in Raising Power Prices to the Max During 2021 Winter Storm? Appeals Court Hears the Case*, HOUSTON CHRON., https://www.houstonchronicle.com/business/energy/article/Did-PUC-go-too-far-in-raising-power-prices-to-the-17130255.php [https://perma.cc/63Z4-JYMH] (Apr. 27, 2022, 5:47 PM) ("The Texas Public Utility Commission's February 2021 emergency rules allowing an increase in wholesale electricity prices of $9,000 per megawatt hour to address massive power shortages and widespread outages were 'invalid and ineffective,' . . . lawyers representing several large energy companies told a Texas appeals court . . . .").

53. Scott DiSavino, *Texas Cuts $9,000 Power Price Cap After February Freeze*, REUTERS (Dec. 3, 2021, 10:53 AM), https://www.reuters.com/markets/commodities/texas-cuts-9000-power-price-cap-after-february-freeze-2021-12-03 [https://perma.cc/QG6J-9GX3].

54. Hogan, *supra* note 39, at 69.

55. *Id.*

> and the market price for the energy needed to serve that load should also be at its highest.[56]

Recognizing this market failure, the PUC, at a "six-minute meeting" on February 15, 2021, "decided to address the gap between supply and demand by issuing an emergency 'rule' that reset the maximum price at $9,000 per megawatt hour—up from $1,200 at which power was trading in wholesale markets at the time."[57]

Prior to February 2021, the wholesale price of electricity in the ERCOT market had only topped out at this $9,000/MWh maximum a handful of times, and in each instance the price remained at the HCAP (by design) for less than an hour.[58] During Winter Storm Uri, the price remained at the $9,000/MWh HCAP for *days*, resulting in "extraordinary financial liability" that dwarfed anything previously seen or imagined.[59]

As previously explained, "the state's deregulated electricity market relies mainly on financial incentives to prompt generators to deliver more power to the grid in times of soaring demand."[60] The issue is that these incentives presuppose a market where buyers and sellers are making *choices*. The incentive structure evaporates in circumstances where buyers must consume electricity or freeze, and where producers have ordered "all hands on deck" but cannot produce more electricity, even if the wholesale price was $1 million/MWh, because their equipment is frozen. In other words, "the maximum $9,000 incentive had little impact [during Winter Storm Uri]—aside from socking some retail electricity providers, cooperatives and other wholesale buyers with huge bills—because nearly half the state's generation capacity had been knocked offline by the weather or related problems."[61]

In the aftermath of Winter Storm Uri, the realization that these immense costs would ultimately be "passed on to consumers around the state in the

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56. UNIV. OF TEX. AT AUSTIN: ENERGY INST., THE TIMELINE AND EVENTS OF THE FEBRUARY 2021 TEXAS ELECTRIC GRID BLACKOUTS 60 (2021), https://energy.utexas.edu/sites/default/files/UTAustin%20%282021%29%20EventsFebruary2021TexasBlackout%2020210714.pdf [https://perma.cc/733F-3D2U] (footnotes omitted).

57. Curriden, *supra* note 52.

58. R.A. "Jake" Dyer, *Blog: ERCOT Experiences Record Consumption, Real-Time Prices Reach $9,000 Cap*, TEX. COAL. FOR AFFORDABLE POWER (Aug. 14, 2019), https://tcaptx.com/industry-news/ercot-real-time-prices-hit-record-9000-mark [https://perma.cc/2RHX-HK8Q].

59. Bob Sechler, *In Wake of Power Outages, Texas Lowers Price Cap for Electricity Providers*, AUSTIN AMERICAN-STATESMAN, https://www.statesman.com/story/business/2021/12/02/texas-lowers-electricity-price-cap-after-february-freeze-power-outages/8838232002/ [https://perma.cc/Z8QT-M9YD] (Dec. 2, 2021, 3:46 PM); Mark Curriden, *Texas Appeals Court Hears Arguments on Legality of $9,000 Electric Rates During Winter Storm Uri*, TEX. LAWBOOK (Apr. 27, 2022), https://texaslawbook.net/texas-appeals-court-hears-arguments-on-legality-of-9000-electric-rates-during-winter-storm-uri/ [https://perma.cc/SD7W-F8Z9].

60. Sechler, *supra* note 59.

61. *Id.*

form of monthly charges on electricity bills" elicited public outrage and exacerbated political crises already well underway.[62]

Soon thereafter, the PUC decided to lower the HCAP from $9,000/MWh to $5,000/MWh—a decrease of nearly 45%.[63] While this and the other affiliated changes appear to have solved state officials' political problems for the time being, they are simply not imaginative enough to prevent a repeat financial disaster should the market collapse again. In the face of rapidly evolving environmental, economic, and legal circumstances, Texas needs a price-capping methodology that *ensures* customers will not be exposed to outrageous financial liabilities when the grid is crippled by statewide emergencies.

IV. A Rapidly Evolving Environmental, Economic, and Legal Landscape

A. The Environmental Landscape

Given the standard rarity of extreme winter weather events across Texas, it is not hard to see why administrators and regulators largely ignored the possibility of any winter weather-induced system failures prior to February 2021.[64] Any significant investment in preventive measures, such as winterization of power plants, would have simply been considered disproportionate to the threat of a prolonged outage.[65] However, as the global climate has changed, so too has the soundness of that logic. Simply put, "[c]limate change is causing events that used to be rare to become more common . . . . Those are the impacts or effects of climate change that could be more unpredictable. Events are more extreme and in locations where you don't expect them, such as in Texas."[66]

While market forces alone may compel industry actors to address critical system vulnerabilities retroactively, regulatory measures ensure those same vulnerabilities are addressed proactively. Without uniform regulatory standards, utility providers have little choice but to forgo any nonessential costs in pursuit of a greater market share. For example, absent some kind of explicit government mandate, utility providers have little incentive to invest in weather protection and noncritical maintenance.[67] Utility regulation

62. *Id.*

63. *Id.*

64. Domonoske, *supra* note 2.

65. *See id.* ("[T]his weather was just beyond what the entire system was ever designed to handle. . . . Texas' entire power grid is designed to meet peak demand in the summer, when air conditioners all kick in at once. It's not built for high winter demand.").

66. Uribe & Skomro, *supra* note 32 (internal quotation marks omitted).

67. *See* Krauss et al., *supra* note 4 ("With so many cost-conscious utilities competing for budget-shopping consumers, there was little financial incentive to invest in weather protection and maintenance.").

motivates utility providers to act in everyone's best interest without infringing on providers' opportunities to capitalize on other competitive advantages. When employed effectively, utility regulation is a means of keeping "prices down while protecting public safety and guaranteeing fair treatment to customers."[68] Thus, common-sense regulatory solutions such as mandatory winterization of power plants and other critical infrastructure are the most obvious (and likely the far most effective) tools that lawmakers may employ to address these novel issues. Although these mandates must inevitably take the form of regulatory measures, their grounded practicality and undeniable necessity make them no-brainers. In other words, these measures are *not* the kind of unnecessary government intrusion that Texans characteristically abhor.

It is therefore entirely to their credit that the Texas Legislature responded to the events of 2021 by mandating weatherization upgrades to the state's power plants.[69] These measures, and others enacted following Winter Storm Uri, should dramatically improve the resiliency of Texas's grid and its ability to withstand known threats. Though some have suggested it,[70] Texas does not need to completely abandon its independent power grid to achieve these policy aims—so long as Texas's leaders maintain an open mind to sensible regulatory safeguards necessary to protect against catastrophic system failures during emergencies.

Once known threats are accounted for, responsible stewardship of any modern grid requires additional action to prepare for *unknown* threats. Though it is admittedly "hard to persuade taxpayers to spend extra money to guard against disasters that seem unlikely . . . climate change flips that logic, making inaction far costlier."[71] What once might have been a pragmatic balancing of interests has become an increasingly dangerous and ill-advised gamble. That is why, regardless of improvements already made, Texas lawmakers and regulators must continue amending their policies and procedures to account for the ever-greater likelihood of more frequent and severe extreme weather events.

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68. *Id.*

69. Erin Douglas & Mitchell Ferman, *Texas Legislature Approves Bills to Require Power Plants to "Weatherize," Among Other Measures to Overhaul Electric Grid*, TEX. TRIB., https://www.texastribune.org/2021/05/26/texas-power-grid-reform-legislature/ [https://perma.cc/W9MA-KXQE] (May 30, 2021).

70. *See, e.g.*, Cayla Harris & Benjamin Wermund, *Should Texas Join the National Power Grid? Congressional Democrats Say It's Worth Exploring.*, HOUS. CHRON., https://www.houstonchronicle.com/politics/texas/article/Should-Texas-join-the-national-power-grid-15961654.php [https://perma.cc/K83S-35S7] (Feb. 19, 2021, 6:49 AM).

71. Flavelle et al., *supra* note 1.

B. The Economic Landscape

Among other significant roadblocks, one "historical challenge with addressing climate change is that for many, it feels too big and too far-off."[72] Increasingly, though, Americans are beginning to come to terms with the everyday implications of climate change as they begin to "see environmental degradation right in their own backyards."[73] Over the last several years, climate change has demonstrably affected the U.S. economy as climate-related costs have increased.[74] During that same period, as Texans experienced during the winter storm, "[e]xtreme weather events and other climate-related effects have harmed the health, safety, and security" of many Americans.[75] These economic impacts and threats to health, safety, and security are, unfortunately, harbingers of what lies ahead. As climate change generates more intense and frequent extreme weather events, critical infrastructure that was "built decades ago, under the expectation that the environment around it would remain stable, or at least fluctuate within predictable bounds,"[76] will regularly be strained well beyond its limits. The same is true of critical administrative policies and procedures, such as Texas's scarcity-pricing rules.

Moreover, as Texas's appetite for electrical demand continues to grow, an ever-greater percentage of the state's production is coming from renewables.[77] Moving forward, when the wind is blowing and the sun is shining (as they often are in the Lone Star State), this will mean an abundance of inexpensive, environmentally friendly electricity. When conditions worsen, however, stop-gap production on the part of thermal generators will be even more critical to ensure system-wide reliability. Thus, any change to Texas's pricing rules cannot ignore the need to properly incentivize investment in—and support the continued (i.e., solvent) operation of—traditional power plants.

C. The Legal Landscape

In June 2021, the Texas Legislature amended the Texas Public Utility Regulatory Act (PURA) to mandate that the PUC "establish an emergency

72. Quill Robinson, *Congress Is Key to Sustainable Environmental Action*, THE HILL (Feb. 16, 2021, 3:30 PM), https://thehill.com/opinion/energy-environment/538934-congress-is-key-to-sustainable-environmental-action/ [https://perma.cc/NK2J-EQEJ].

73. *Id.*

74. *See* Exec. Order No. 13,990, 3 C.F.R. 427, 432 (2022) (noting an increase in climate related costs in recent years).

75. *Id.*

76. Flavelle et al., *supra* note 1.

77. Garrett Golding, *Surging Renewable Energy in Texas Prompts Electricity Generation Adequacy Questions*, FED. RSRV. BANK OF DALL. (Aug. 17, 2021), https://www.dallasfed.org/research/economics/2021/0817 [https://perma.cc/ZU54-DFBH].

pricing program for the wholesale electric market."[78] The amendment specifies certain parameters the emergency pricing program must adhere to, but nonetheless gives the PUC broad discretion to develop and adopt a program that it feels makes sense.[79] In light of this legislative mandate, a change to the existing price-capping rules is not just good policy but a legal necessity.

Various stakeholders have weighed in, suggesting how best to design such a market "circuit breaker."[80] However, the PUC has thus far declined to make changes in response to either these stakeholder comments or the amended statute.[81] When the PUC adopted its new, lower HCAP in December 2021, it simultaneously announced that the "emergency pricing program [was] beyond the limited scope of [that] rulemaking."[82] Rather than amend the whole price-capping methodology at once, the PUC pledged to "establish the emergency pricing program as required in PURA § 39.160 in a future rulemaking."[83] This should be done as promptly as possible—and in crafting the emergency pricing program, the PUC ought to seriously consider marginally more sophisticated price-capping mechanisms than those it currently employs.

V. Recommended Emergency Price-Capping Mechanisms

As previously mentioned, not long after Winter Storm Uri, the Public Utility Commission amended Texas's price-capping rules, reducing the HCAP from $9,000/MWh down to $5,000/MWh.[84] The PUC explained its choice by suggesting that "[a]fter the extreme weather events of February 2021, the price cap of $9000 per MWh [had] proven to be a liability on market participants."[85] Though its analysis is spot-on, the Commission's hastily enacted "solution" is, in fact, nothing of the sort.

To be clear, changes to Texas's price-capping rules are not a linchpin solution capable of addressing the larger issues of reliable power production and delivery. Not to overextend an imperfect metaphor, but if one were to consider the whole Texas power grid as an automobile, price-capping rules would be far more akin to emergency seatbelt cutters than they would be to

78. TEX. UTIL. CODE ANN. § 39.160(a).

79. *See id.* (directing the commission to establish an emergency pricing program while outlining only six broad requirements).

80. *Proposal for Adoption for Amendments to 16 TAC § 25.505 as Approved at the December 2, 2021 Open Meeting*, PUB. UTIL. COMM'N OF TEX. 9–10, https://www.puc.texas.gov/agency/rulesnlaws/subrules/electric/25.505/52631adt.pdf [https://perma.cc/YNM9-R3H7].

81. *Id.* at 10.

82. *Id.* at 1, 10.

83. *Id.* at 10.

84. DiSavino, *supra* note 53.

85. *Id.*

snow tires. That said, when they are needed, they are needed urgently. And when they are used, they must function swiftly and without complication. Thus, as others go about improving grid reliability and market integrity by other means, it is still important that these administrative procedures be improved as well. The PUC plainly admitted that the price-capping methodology needed fixing[86]—all that's left to do now is substitute a real fix for the superficial "solution" that was enacted by these entities in 2021.

A. Emergency "Event" Price-Capping

ERCOT already has broad discretionary authority to take extraordinary action in an emergency if such measures are "necessary to protect the public interest," even if such measures would be otherwise inconsistent with the code.[87] In an emergency, however, it would be significantly better if officials could adhere to a predetermined emergency pricing protocol rather than make one up discretionarily.

Section 5 of ERCOT's Official Protocols encompasses "Reliability Unit Commitment" (RUC),[88] which is "a daily, hourly, or weekly process conducted to ensure that sufficient generation capacity is committed to reliably serve the forecasted load."[89] In extreme circumstances, this process can be used by ERCOT to mandate that producers come online even when they would prefer not to.[90] Producers are then compensated retroactively using a formula that accounts for each producer's variable costs.[91]

The most straightforward and tailored solution to Texas's emergency price-capping woes is to "draw a straight line" from any declaration of ERCOT's highest state of emergency (an Emergency Energy Alert Level 3 (EEA 3))[92] to a RUC-type response. If such a mechanism were employed, then following an EEA 3 declaration, ERCOT could automatically mandate

86. *See id.* (mentioning that the PUC described its $9,000 price cap as a "liability on market participants").

87. 16 TEX. ADMIN. CODE § 25.505(f) (2022) (Pub. Util. Comm'n of Tex., Resource Adequacy Reporting Requirements in the Electric Reliability Council of Texas Power Region).

88. *Current Protocols - Nodal*, ERCOT, https://www.ercot.com/mktrules/nprotocols/current [https://perma.cc/NQ37-KQ77].

89. Garret L. LaBove, Robin Broder Hytowitz & Kory W. Hedman, *Market Implications of Reliability Unit Commitment Formulations for Day-Ahead Scheduling*, INST. OF ELEC. & ELECS. ENG'RS (July 2014), https://ieeexplore.ieee.org/abstract/document/6939905 [https://perma.cc/A8VV-3GS3].

90. *See* ERCOT Nodal Protocols Section 5: Transmission Security Analysis and Reliability Unit Commitment (Sept. 1, 2022), https://www.ercot.com/mktrules/nprotocols/current [https://perma.cc/S7ML-LPM9] ("After the use of market processes to the fullest extent practicable . . . any ERCOT Dispatch Instructions for additional capacity that order [certain market participants] to commit a specific Generation Resource to be On-Line shall be considered a RUC Dispatch . . . .").

91. *Id.*

92. *Summer 2022 Energy Emergency Alert Overview*, ERCOT (May 2022), https://www.ercot.com/files/docs/2022/02/02/2022_EEA_Overview.pdf [https://perma.cc/X2MZ-BTLK].

that every eligible, non-active producer come online as soon as possible and begin producing as much electricity as they could manage. Until statewide supply and demand regress to equilibrium, ERCOT could continue administratively committing as many units as necessary to balance the equation. Then, as explained above, in the aftermath of the scarcity event, ERCOT could *subsequently* determine how to compensate producers that were dragooned into service by allowing those producers to submit their verifiable costs for reimbursement in accordance with a predetermined settlement process.

The critical feature of this solution is that it would afford ERCOT (and other regulatory entities) a means of responding to statewide energy crises—promptly maximizing the available supply of electricity—*even in the event of a total statewide market collapse*. In the same way that emergency declarations of other varieties often make demands of non-governmental entities in order to accelerate recovery efforts (prohibitions on price-gouging, etc.),[93] this mechanism would empower civic leaders to address energy crises head-on by *demanding*, rather than *attempting to incentivize*, market participation. Faced with an immediate humanitarian need, legitimate public safety concern associated with a catastrophic market interruption, or both, regulators would have a legitimate means of circumventing standard market forces while at the same time remaining mindful of producers' need to be made whole in the event's aftermath. In short, this solution would best protect market integrity and ensure maximum grid reliability regardless of what unforeseen event interrupted service (be it a hurricane, blizzard, wildfire, etc.).

From consumers' perspectives, the primary advantage of this solution is that it promptly maximizes the available electrical supply while mitigating end consumers' costs. Although consumers still pay for the power they use, any excess costs are directly proportional to producers' legitimate variable costs. Thus, it is worth noting that one of this solution's less elegant features is that pricing according to this model would do little alone to discourage discretionary consumption. Consequently, this solution would also require coordination with transmission companies such that any orderly restoration of service would be informed by a hierarchy of humanitarian need. Put differently, in an emergency, the entities responsible for facilitating local power delivery would need to ensure that service was restored to families' residences before it was restored to businesses' factories. Otherwise, the

93. *See* Heather Morton, *Price Gouging in an Emergency or Disaster*, NAT'L CONF. OF STATE LEGISLATURES (Mar. 24, 2020), https://www.ncsl.org/blog/2020/03/24/price-gouging-in-an-emergency-or-disaster.aspx [https://perma.cc/D3TZ-FQMU] ("In a state of emergency, the prices of necessary items have the potential to increase very quickly. . . . [P]olicymakers move[] swiftly to make emergency declarations that trigger[] protections for consumers to prevent escalating prices on necessary items.").

relatively low wholesale price of electrical power would entice high-impact industrial consumers to resume operations prematurely. This type of coordination between ERCOT and transmission companies is already a feature of the controlled outages that are sometimes used to rapidly curtail demand.[94]

From producers' perspectives, the primary disadvantage of this solution is clearly that it eliminates the possibility of a massive financial windfall should they manage to continue operating during statewide scarcity events. However, the consensus viewpoint—industry stakeholders included—is that the wholesale marketplace and power grid have to work for everyone.[95] While producers understandably desire to profit marginally more from their own operations when demand is higher than usual, they nonetheless recognize the importance of sensible consumer price protections, especially during emergencies.[96] Moreover, this type of extraordinary market intervention is only necessary in the most extreme of system meltdowns; producers must also recognize their responsibility to take necessary precautions to avoid complete system collapses in the first place.

As previously explained, the existing price-capping mechanism is intended to represent a balancing of "two competing concerns: providing generation and load resources a reasonable opportunity to cover their fixed costs over time and protecting load from excessive transfers of wealth to generators during periods of low reserve margins."[97] While the existing price-capping mechanism has—up to this point—largely succeeded in ensuring that producers are "provided an opportunity to earn a reasonable return on investment," and that intermittently high prices "send[] a strong signal for additional resources to come online or improve availability during scarcity conditions,"[98] it must do more. The existing mechanism is not sophisticated enough to address total, prolonged market collapses or to align stakeholder incentives such that producers willingly invest additional funds in preparatory measures such as winterization of power plants and

94. ERCOT*, supra* note 92.

95. *See* PUB. UTIL. COMM'N OF TEX., *supra* note 80, at 4–5 (agreeing with industry stakeholders that lowering the HCAP to $5,000 per MWh "strikes the best balance of ensuring appropriate generation is brought to the market . . . while limiting extraordinary financial liability for all market participants").

96. *See id.* at 9–10 (stating that producers have commented that the "commission should implement the emergency pricing programs in accordance with PURA § 39.160 to protect the market from sustained scarcity prices over a long duration and limit the financial risk exposure of extended real-time price excursions during extreme weather events").

97. *Order Adopting Amendment to § 25.502, New § 25.504 and New § 25.505 as Approved at the August 10, 2006, Open Meeting*, PUB. UTIL. COMM'N OF TEX. 73, https://www.puc.texas.gov/agency/rulesnlaws/subrules/electric/25.502/31972adt.pdf [https://perma.cc/T4JM-M33V].

98. *Texas Public Power Association's Initial Comments Regarding the Review of the ERCOT Scarcity Pricing Mechanism*, PUB. UTIL. COMM'N OF TEX. 3, https://interchange.puc.texas.gov/Documents/51871_5_1117263.PDF [https://perma.cc/2NQB-Z9EN].

transmission infrastructure. An "event" price-capping model would best conserve that which is already working well and best atone for that which is not.

B. "Seasonal" Price-Capping

In Texas, the next most viable alternative price-capping technique would be to amend the existing rules such that market integrity is assumed in the spring, summer, and fall but not in the winter. In other words, an exception to the existing market structure would be made specifically in anticipation of another massive winter storm. During the spring, summer, and fall, the existing model could be employed exactly as it is now—then, during the winter months, a "seasonal" cap would be set at a dollar figure per megawatt-hour at or below the existing LCAP.

One principal advantage of this solution is that, of the two solutions proposed here, it is the most similar to what is on the books already. Another principal advantage is that it would categorically prevent winter storms from inducing excessive financial liabilities *without* first requiring an emergency declaration. Just like the event price-capping model proposed above, this model would allow market participants to reap the full benefits of high-price-cap intermittent scarcity pricing in the dead heat of summer (as intended) while mitigating consumer risk during the winter months when scarcity pricing might be prolonged. If we are willing to assume that the only category of statewide weather emergencies capable of crippling the entire system is inclement winter weather, this marginally more sophisticated model (than what is presently used) could afford greater consumer price protection and better align stakeholder interests.

Additionally, this solution would benefit market participants via complete pricing certainty—a feature that has several major upsides. First, investors are more likely to finance new generating entities when they can be assured that the pricing parameters are not subject to change—and under this model, they would not be. Second, producers have considerably greater incentives to invest in winterization if they know there is no possibility of a hyper-inflated wholesale price during a winter scarcity event. In other words, the only way for producers to profit during the winter months would be to improve reliability.

The relative disadvantages of this solution (compared to an event price-capping alternative) are that (1) it makes no allowance for the possibility of prolonged statewide disasters in non-winter months; (2) it offers less protection to consumers in terms of mitigating their ultimate financial burden following crisis events; and (3) it does not afford regulators and civic leaders a straightforward protocol to commit additional units in the event of a prolonged, total market collapse. Nonetheless, this model would still

represent an improvement over what is presently in place and would do so with little alteration to the existing administrative rules and applicable laws.

C. Need for Improvement & Implementation Protocol

Readers may be asking themselves why exactly, especially in the period following Winter Storm Uri, these changes or similar ones have not already been adopted. The short answer is that the existing model was exactly as complex as it needed to be to address reliability concerns under less extreme climatological conditions. So, the need for a new model is largely a function of novel reliability concerns wrought by increasingly more extreme climatological conditions. Moreover, in the immediate aftermath of Winter Storm Uri, the new regulatory and administrative measures adopted by the Texas Legislature, the PUC, and ERCOT sought to address the overarching and more prescient issue of grid reliability (i.e., power delivery, not price integrity and market incentives) in order to prevent similar system failures from occurring soon thereafter.[99] Many decision makers likely reasoned that so long as the underlying reliability issues were urgently addressed, the price-capping mechanisms did not need to be urgently amended also. However, as the earlier sections of this Note attempted to make clear, even in light of other system reliability improvements, Texas needs a "circuit breaker" it can employ if the grid and affiliated market collapse under the weight of another unforeseeable disaster. Uncontroversially, "unsinkable ships" should still carry enough lifeboats.

That sensibility is what drove Texas legislators to mandate that the PUC and ERCOT develop and deploy a new emergency price-capping model by amending the Texas Public Utility Regulatory Act to require that the PUC "establish an emergency pricing program for the wholesale electric market."[100] Since the passage of that legislation, the PUC has begun the process of soliciting input from industry stakeholders, civic leaders, and other interested parties in order to evaluate possible alternatives in light of each parties' interests.[101] It has not yet, however, announced or implemented rule changes to fulfill that legislative mandate.

Unsurprisingly, many stakeholders have fully agreed that a new emergency price-capping methodology ought to be adopted and have, in

99. *See* Douglas & Ferman, *supra* note 69 (discussing a bill approved in May 2021 that "require[s] power generation companies to better prepare their facilities to withstand extreme weather").

100. TEX. UTIL. CODE ANN. § 39.160(a) (2021).

101. *See Filings for Project 52373*, PUB. UTIL. COMM'N OF TEX., https://interchange.puc.texas.gov/search/filings/?UtilityType=A&ControlNumber=52373 [https://perma.cc/5NDQ-EHT9] (listing hundreds of filings made by various parties including industry stakeholders and civic leaders); *see also Filings for Project 51871*, PUB. UTIL. COMM'N OF TEX., https://interchange.puc.texas.gov/search/filings/?UtilityType=A&ControlNumber=51871&ItemMatch=Equal&DocumentType=ALL&SortOrder=Ascending [https://perma.cc/Y4P5-EZS3] (same).

particular, called attention to economic, demographic, and utility-load forecasts that suggest Texas's appetite for electricity will continue to grow at unprecedented rates. Because so much of the supply necessary to meet that demand will come from renewable sources that necessarily rely more on favorable environmental conditions, a more sophisticated suite of tools will be required to manage the supply–demand equation and respond effectively to market disintegration during emergencies. Simply put, industry stakeholders recognize that "Texas is approaching the limits of the current generating mix, if it has not already reached them. The grid is increasingly reliant on intermittent renewable generation as questions arise about how much thermal capacity is actually available to cover unexpected shortfalls—all while electricity demand increases."[102]

If and when the PUC and ERCOT choose to adopt a new price-capping mechanism (as they should), they need only adopt such a measure as essentially an administrative rule, according to the purview of their authority and in compliance with the mandate they received to undertake such rulemaking from the state legislature. This could occur as urgently as is deemed necessary and appropriate—and hopefully by now it is imminently clear: it is at this moment urgently necessary and appropriate.

Conclusion

Texas's energy independence crusade is not now, nor has it ever been, inherently misguided. However, as the stewards of their own fate, Texas's leaders must now squarely address the novel challenges posed by rapidly evolving environmental and economic circumstances.[103] Climate scientists are convinced that unprecedented weather events will strike Texas with increasing severity and frequency in coming years. The state can begin to prepare for those events now by further amending current regulatory standards and administrative rules to account for changing climatological norms. Winter Storm Uri revealed a number of system vulnerabilities that can and should be directly addressed—Texas's wholesale price-capping methodology remains a prime candidate for improvement.

While price-capping rules are not a linchpin solution to the larger issues of reliable power production and delivery, they are an important safeguard against financial disaster. When they are needed, they are needed urgently. And when they are employed, they must function swiftly and without complication. The PUC and ERCOT have plainly admitted that Texas's price-capping rules circa February 2021 were not sufficient to achieve their

102. Golding, *supra* note 77.

103. *See* Kimble v. Marvel Ent., LLC, 135 S. Ct. 2401, 2415 (2015) ("[I]n this world, with great power there must also come—great responsibility." (quoting STAN LEE & STEVE DITKO, MARVEL, AMAZING FANTASY #15, at 13 (1962))).

intended purpose. Unfortunately, despite a handful of amendments adopted by the PUC in 2021, the rules remain insufficient to ensure fair and efficient pricing should Texas experience another prolonged statewide power emergency. Consequently, Texas's leaders ought to immediately employ more sophisticated price-capping rules in order to ensure the integrity of the state's electricity marketplace and the reliability of its power grid.

In my view, the two most sensible emergency price-capping methodologies that would best achieve regulators' and policymakers' aims are an event price-capping technique and a seasonal price-capping technique. As Texas's leaders continue working to strengthen and improve the state's independent grid, both of these alternative methodologies deserve serious and immediate consideration.