

# The Decline and Fall of Reliability, Affordability, and Competition in ERCOT

*By Bill Peacock*



*July 2022*

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**ENERGYALLIANCE**

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## Executive Summary

Problems with generation adequacy and reliability in the Texas grid were once rare occurrences. That does not appear to be the case anymore. For two straight years the grid has struggled to keep the lights on, despite promises that “everything that needed to be done was done to fix the power grid in Texas” after the 2021 blackouts. The foundation for the reduction of reliability in the Electric Reliability Council of Texas (ERCOT) is the politicization of the Texas electricity market—particularly the push for renewable energy—and the resulting collapse of competition in the market.

In response to Texas’ blackouts, regulators at the Public Utility Commission of Texas (PUC), under the direction of the Texas Legislature and Gov. Greg Abbott, have undertaken a restructuring of the Texas electricity market. At a July 2021 press conference, PUC Chairman Peter Lake was asked if a “capacity market was on the table” in the conversations about market restructuring. He responded by saying, “That was not addressed in legislation by the 87th Legislature.” Nonetheless, actions taken by the Texas Legislature, the PUC, and ERCOT point to the end of Texas’ world-class energy-only market and the onset of a de facto capacity market in Texas, an outcome that a number of parties have been promoting for over a decade.

Though regulators at the PUC, grid managers at ERCOT, and advocates for renewable energy must share some of the blame for what has happened to the Texas grid over the years, the ultimate responsibility for the collapse of the grid in ERCOT rests in Texas’ Legislature, governor, lieutenant governor, and House speaker. For years they have supported giving billions of taxpayer and consumer money to corporations with multi-billion market caps while being unwilling to take on renewable energy.

The greatest danger that the Texas grid faces now is the political establishment’s continued unwillingness to challenge the environmental left’s and energy industry’s push for subsidies. If this continues, Texas will lose what is left of its competitive energy-only market. Yet the possibility of restoring reliability, affordability, and competition to ERCOT remains. All Texas has to do is let the market work.

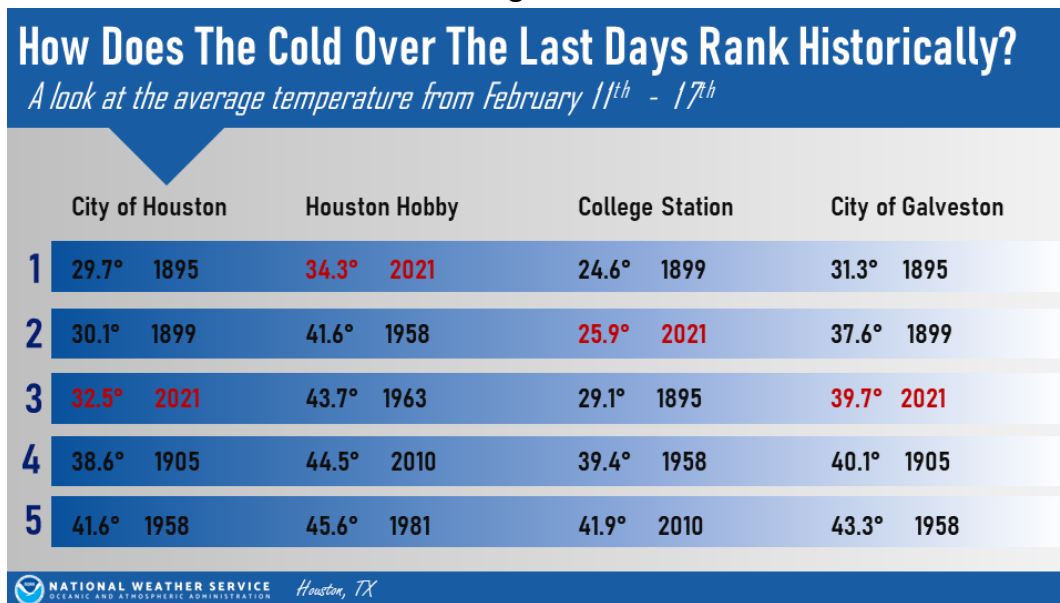
## Electric Reliability Collapses in ERCOT

There have been a number of major blackouts in the United States over the last 60 years. For instance, the Northeast Blackout (1965) left over [30 million people](#) without power for up to 13 hours. In 1977, parts of New York City rioted during a major blackout, which resulted in 4500

looters arrested and 550 police officers injured. California’s 2011 blackout lasted 12 hours and affected 2.7 million people. While these (and most other major) blackouts had their roots in environmental factors, all of them could have been avoided, or at the least, the damage they caused could have been greatly limited if not for human error.

The same can be said about the Great Texas Blackout of 2021. By the day before the blackouts began, Sunday February 14, the [National Weather Service](#) noted that “every square inch of Texas was in a Winter Storm Warning.” For the first time in its history, the Weather Service’s Galveston Office issued a Hard Freeze Warning and a Wind Chill Warning that was in effect Sunday night/Monday morning. The frozen weather persisted and worsened. On Monday, Texas’ five largest cities experienced record lows for the date—with four of them beating the old record by 10 degrees or more. By Tuesday, “the City of Houston went down to 13°F, Galveston down to 20°F, and College Station bottomed out at just 5°F.” The average temperatures along the upper Texas Gulf Coast that week were the lowest since the 19th century—well before the modern electric grid was built.

Figure 1



Source: [National Weather Service](#)

As Sunday midnight approached, demand was spiking while generation was going offline. By 1:23 Monday morning 35,343 MW of generation was offline ([ERCOT](#), 12). At 1:25, ERCOT, the grid operator for about 80 percent of the Texas electric market, announced that it would “shed load” and “instruct utilities to begin rotating outages. Over the next thirty minutes, generation going offline and load shedding orders occurred at a rapid pace. The blackouts had begun. For the next 105 hours, the Texas grid would operate under emergency conditions. It was not until three days later that ERCOT canceled the last of its controlled outage orders. And finally, on Friday morning, ERCOT restored normal operations ([16](#)).

During those four days, more than 4.5 million homes and businesses lost power for at least some portion of the time. That translates into about 10 million Texans without power, many for several days. Water service was disrupted for more than 12 million people. Some of this was due to pipes freezing and bursting, but much of the disruption was caused by water systems, such as for the city of Austin, suffering low pressure or complete failure because of the power outages and failure to properly turn to backup systems. In many areas, gasoline and food were also in short supply.

Thus far, 2022 has not brought the extreme cold of 2021. Yet the warmer than usual temperatures of May and June led to an unprecedented series of responses from grid operators, public officials, and the market.

In early May, the unseasonably warm weather came to Texas when about 30 percent of the grid's thermal power [was offline](#) for scheduled maintenance as the heat approached. On May 3, ERCOT issued an operating condition notice (OCN), the [first of four levels](#) of communication issued by the state's power grid operator in anticipation of a possible emergency condition. In addition, ERCOT issued this statement about the situation:

“The Electric Reliability Council of Texas (ERCOT) is anticipating extreme hot weather in the region Friday, May 6 through Monday, May 9 and may experience larger than normal demand for power. ERCOT will deploy all the tools available to us to manage the grid reliably. ERCOT is coordinating closely with the Public Utility Commission, generation resource owners and transmission utilities to ensure they are prepared for the extreme heat. ERCOT has asked power plants across the region to postpone planned outages and to return from outages already in progress in order to serve Texans this weekend. At this time, ERCOT projects there will be sufficient generation to meet this high demand for electricity.”

The following week brought more problems. On Thursday, May 12, ERCOT extended the OCN as generators were told to delay scheduled maintenance. However, on the afternoon of May 13, six generation plants providing 2,900 megawatts (MW)—including [at least one of those](#) that had been told to defer maintenance—tripped offline. At that point, “about 44 percent of natural gas and coal burning power plants were offline, while only about 17 percent of wind turbines were performing as of about 4 p.m.” The resulting shortage caused prices to [skyrocket](#) as high as \$4,000 per kWh in the Houston area, with a statewide average of around \$1,600. Demand was high that day, but well below the state record. The condition of the grid deteriorated to the point that ERCOT [asked Texans](#) “to conserve power when they can by setting their thermostats to 78-degrees or above and avoiding the usage of large appliances (such as dishwashers, washers, and dryers).”

As the warm weather persisted, the next week (May 15) ERCOT again extended the OCN and [told electric generators](#) “to defer planned outages for maintenance and keep producing power to keep the lights on across the state, extending their warning of possible emergency conditions through this Friday.” This potentially kept generators online for seventeen straight days through

a period when generators often make repairs. Despite the problems, Gov. Abbott [declared](#), “The power grid in Texas is far more reliable than it has ever been.”

The weather did not let up and neither did the reliability concerns about the Texas grid. On May 26, ERCOT issued its [second OCN](#): “At 09:00, ERCOT is issuing an OCN for the extreme hot weather with forecasted temperatures to be above 94°F in the North Central and South Central weather zones, from Saturday, May 28, 2022 until Monday, May 30, 2022.”

After a brief dip in temperature the first week of June, the heat picked back up. As a result, ERCOT issued its third OCN in just over a month on June 8: “ERCOT is issuing an OCN for the extreme hot weather with forecasted temperatures to be above 103°F in the North Central and South Central weather zones, from Friday, June 10, 2022 until Monday, June 13, 2022.” The prediction was correct. As the Houston Chronicle [reported](#):

Texas on Sunday set what could be the first of several new records for power demand this summer as officials predicted that temperatures would remain above normal across most of the state for several months.

Texans used a record-breaking 74,917 megawatts of power Sunday evening, slipping by the August 2019 record by about 117 megawatts. The Electric Reliability Council of Texas forecast demand could run a string of ever-higher marks this week as the state bakes in unseasonably hot weather for a second week in a row.

Though there were a few equipment-related blackouts over the weekend, the grid did survive the record heat and demand for electricity that weekend. Yet for 25 out of 41 days before summer began on June 21 there were significant concerns about the reliability of the Texas grid.

These types of problems with generation adequacy and the reliability of the Texas grid were once rare occurrences. That does not appear to be the case anymore. For two straight years the grid has struggled to keep the lights on, despite the promises of Gov. Abbott that “everything that needed to be done was done to fix the power grid in Texas” after the 2021 blackouts. The foundation for the reduction of reliability in ERCOT is the politicization of the Texas electricity market—particularly the push for renewable energy—and the resulting collapse of competition in the market.

## **The Politicization of the Texas Electric Market**

In the 1990s, Texas joined a lot of other states in trying to get cheap electricity out of cheap natural gas by moving away from political rate setting and introducing competition into electric markets. At the time, even many liberal economists and politicians recognized that the politically charged rate-of-return regulation prevalent throughout the country could not make that happen. That is why states as diverse as California, Maryland, New York, and Texas turned toward competition. However, most states did not follow through completely. Some, like

California, could not overcome the political barriers to letting competition work. Some, like Maryland, balked when prices started going up—because of skyrocketing natural gas prices—and abandoned the experiment. Others, like Pennsylvania, had some success. But no one made it all the way to market competition except Texas.

A key point in Texas' move to competition was when PUC commissioners decided to adopt a competitive "energy-only" market. This was in keeping with the Texas Legislature's mandate "that the public interest in competitive electric markets requires that ... electric services and their prices should be determined by customer choices and the normal forces of competition" ([Public Utility Regulatory Act](#)). The Legislature went as far as saying regulatory authorities "may not make rules or issue orders regulating competitive electric services, prices, or competitors or restricting or conditioning competition," except where specifically authorized.

In an energy-only market, new capacity is only built when investors believe that the risk-adjusted returns on doing so are high enough. Regulators have no say in when new generation is built. What Texas' adoption of this did was uniquely (in the U.S.) shift the entire risk of building new generation from consumers to generators. Under the old regime, consumers had to pay for new power plants whether or not they were needed. In the energy-only market, though, if generation is overbuilt or otherwise unprofitable, generators must bear the losses. To make this work and encourage investment in peaking capacity, Texas allowed on-peak energy prices to reach extremely high levels. The resulting competition forced Texas market participants to become more efficient and brought substantial improvements in grid reliability (more on reliability in the next section).

It was this market design—and just as important the willingness to move away from political regulation of the market—that led to the success of the Texas electric market over the next 15 years. As economist Robert Michaels [explained](#):

Texas' success was largely due to the willingness to let markets work and not manipulate prices or access policies. While the transformation of American electricity has been dominated by a largely political competition to 'design' markets for it, Texas did not 'design' a retail market in any meaningful sense—it instead set general rules for retail electric providers ... and allowed them to compete as they wished within those rules. The details of what would be sold and how it would be priced were left to the ingenuity of buyers and sellers."

While the market became a success, not all generators found the efficiency needed to survive in a competitive market. This was especially the case for generators who entered the market when prices were near the peak levels in 2007-08. For instance, in 2007 Energy Future Holdings formed through the largest leveraged buyout in American history. Yet by 2014, it had declared bankruptcy. The problem was not with the market. It was the massive debt EFH had taken on just before electricity prices began to follow natural gas prices in a steep decline. As the Wall Street Journal [reported](#), "One of the biggest leveraged buyouts of an American company is

preparing to file for bankruptcy protection, brought to its knees by heavy debt and a misguided bet on the direction of natural gas prices.”

Other generators held on, but as profits declined they began to complain that it was impossible for them to make enough money to ensure generation adequacy by maintaining investments in new generation. They began demanding “capacity payments” from Texas regulators and politicians, in effect blackmailing them [by claiming](#) that without the payments Texas was “on course for a power reliability crisis, with the potential for regular rolling blackouts in just a few short years.” No subsidies, no electricity.

The generators’ claim was conclusively debunked in research by [Kleit and Michaels](#) in 2013:

An examination of ERCOT’s current state does not provide coherent support for radical change in its markets. Critics claim that ERCOT is falling behind on investments needed to maintain its reserve margin. In reality, the 2011-12 shortfalls are largely explicable as idiosyncratic, the results of political, regulatory, and weather events rather than economic ones. In most years of its existence, a three- or five-year projection would show ERCOT falling dangerously short of reserves, but market forces have invariably succeeded in restoring their generation adequacy. The most recent reports also indicate that market forces continue to operate, and that ERCOT is taking advantage of other options such as de-mothballing generation and augmenting demand response. Claims by critics that investment is persistently unprofitable in ERCOT’s energy-only markets rest on a regulator determined formula (Peaker Net Margin) whose definition deals solely with Balancing Market revenues and costs. Adding in potential revenues from the sale of ancillary services leads to a conclusion that peaking units are often economically viable investments. On the surface it appears odd that generation investment in ERCOT continues apace despite official calculations of its unprofitability. In reality a more detailed picture of the choices available to generators shows that building them for ERCOT’s actual markets is often profitable.

Unfortunately, PUC commissioners at the time did not heed this research and instead gave in to generators. The PUC attempted to adopt a full-blown capacity market where generators were paid twice by consumers; once for simply existing and again for any electricity they could sell. A public rebuke from the Texas Senate put a stop to some of this, but the generators persisted, and regulators rewarded them with numerous backdoor payments that functioned as capacity payments and increased consumer costs for electricity. One of the most significant of these was the Operating Reserve Demand Curve (ORDC), implemented by the PUC after its effort to adopt a capacity market was shut down. The annual cost of the ORDC to consumers varies, but in 2019 the cost was about \$3.6 billion.

More recently, PUC commissioners provided massive profits to various electric industry participants (some generators and well as suppliers of natural gas) by arbitrarily raising the price of electricity to \$9,000 per MWh during the 2021 winter storm. Depending on the source one



consults, the cost to buyers of electricity that week increased at least [\\$16 billion](#) to as much as [\\$38 billion](#). Much of it paid—or paid for in the future—by Texas consumers.

In addition to efforts to benefit all generators and other suppliers through market intervention, Texas state and local governments joined with the federal government to give [more than \\$24 billion](#) (since 2006) of subsidies and other benefits to renewable energy generators operating in Texas. About \$12 billion of that came from the federal government, \$10 billion from the state, and \$1.5 billion from local governments.

At the same time the Texas Legislature and the PUC were increasing electricity costs through regulations and subsidies, they implemented numerous measures designed to decrease the market price of electricity and reduce competition in the market. In 1999, the Legislature adopted numerous antitrust measures out of a fear of potential market-power abuse by large generators. In 2007, the Legislature almost completely eliminated competition from the market through legislation; the market was saved only when the bill was killed at the last minute on a technicality. In the following years, the Legislature gave the PUC new authority to increase intervention in the market in numerous ways, including emergency cease and desist authority, the ability to disgorge revenue, and authority to approve mergers and acquisitions. Additionally, the PUC expanded the use of ancillary services on its own in order to disrupt the competitive process. Allegedly used to ensure sufficient resource capacity in times of high or uncertain demand, the PUC allowed ancillary services to be used to intervene in markets before scarcity conditions drove market prices higher than regulators and politicians were comfortable with. All of these measures were driven by political considerations; there was [no evidence of anti-competitive behavior](#) taking place in the market. A Legislature that had once turned to competition to benefit consumers had succumbed to pressure from regulators seeking more power and consumer advocates who never trusted markets in the first place.

With this background, then, it should be no surprise that the response of policymakers to the 2021 blackouts was hyper-political. Competition has been nowhere to be found in the calculations of politicians and regulators attempting to absolve themselves of responsibility for the blackouts. Instead, their efforts focused on trying to cover up the years of market intervention that led to the blackouts. Especially their promotion of renewable energy.

## **Renewables Lead the Way in the Decline of Reliability**

Despite the obvious pressures put on Texas' electric grid by the 100-year winter storm, environmental factors were not the main factor in the massive failure of the grid that week. Human error exacerbated some of the problems the grid faced. For instance, some natural gas generators were unable to operate during the storm because electricity was cut off to facilities involved in the distribution of natural gas ([University of Texas](#), p. 32). Yet the main contributor to the collapse of the grid that week was years of public policy decisions made by the state of Texas and the federal government to intervene in the operation of the market by subsidizing renewable energy. And then to intervene even more in an attempt to correct the problems caused by renewable energy.

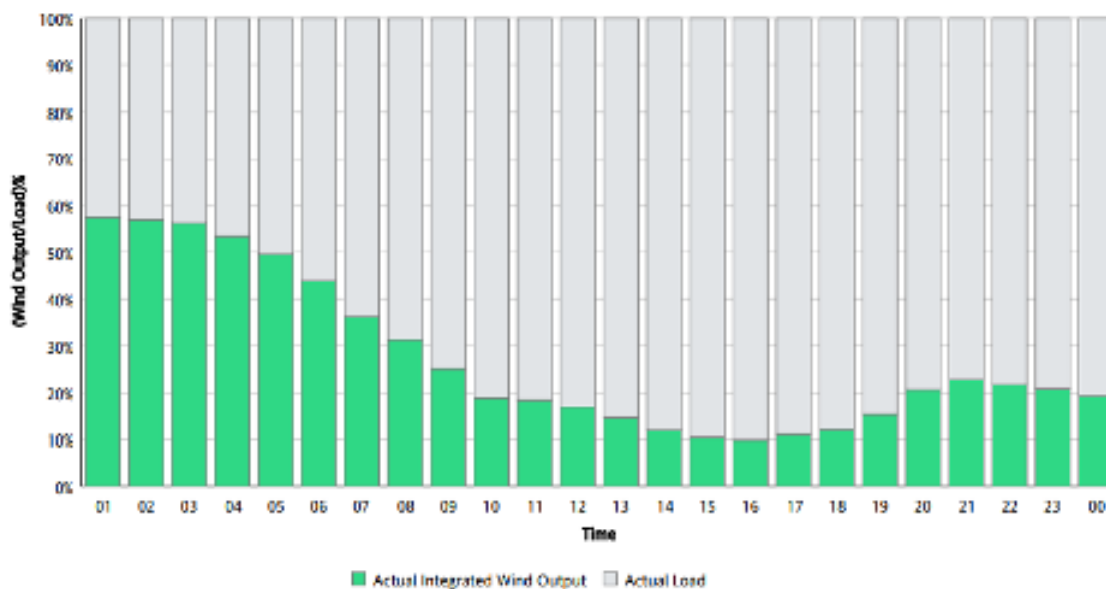
This was not the story heard in the press, however. The same day Texas started experiencing the winter storm blackouts, critics started pointing to markets as the problem. Monday’s *Dallas Morning News* ran a Bloomberg Wire story [that claimed](#), “The extreme cold appears to have caught Texas’s highly decentralized electricity market by surprise.”

When some politicians attempted to point to renewables as the cause, market critics spoke out again. The New York Times [ran this headline](#): “No, Wind Farms Aren’t the Main Cause of the Texas Blackouts. The state’s widespread electricity failure was largely caused by freezing natural gas pipelines. That didn’t stop advocates for fossil fuels from trying to shift blame.” And another Bloomberg [story](#) opined, “Don’t point too many fingers at Texas wind turbines, because they’re not the main reason broad swaths of the state have been plunged into darkness.”

Yet the data on this point is straightforward. The push for renewable energy in Texas over the last almost 25 years was the leading cause of the blackouts—or at least the massive extent of the blackouts.

Two weeks before the storm hit Texas, wind dominated the Texas market. Wind generation topped 50% of installed capacity and produced close to 40% of the total ERCOT load for much of the day. Even the week before, wind output was strong throughout the day—especially in the early morning hours. This was true both in terms of its capacity factor (64%) and percentage of the ERCOT load (58%).

**Figure 2**  
**Actual Wind Output as a Percentage of the ERCOT Load**  
**02/08/2021**

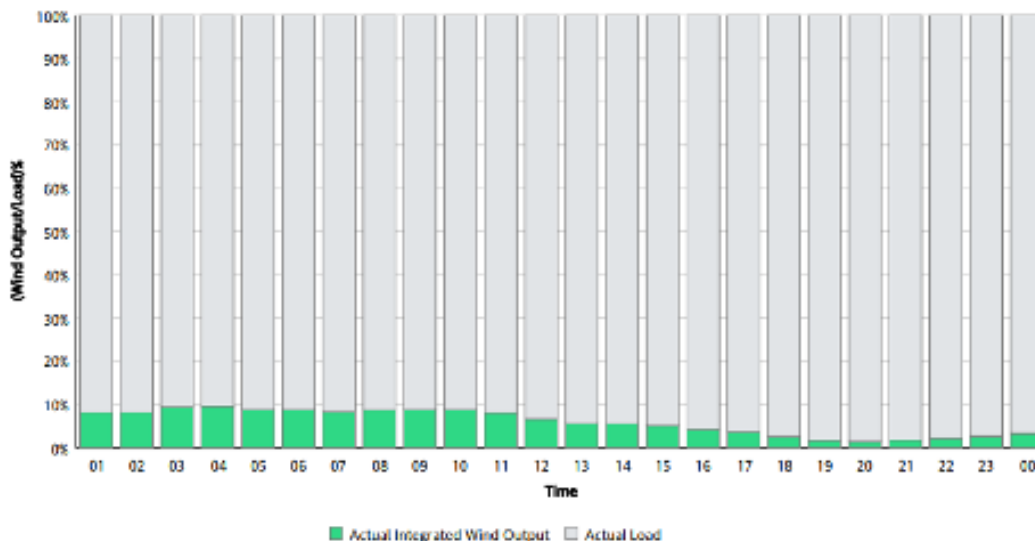


Source: ERCOT

The participation of wind, however, was very different as the storm descended on Texas. The Electric Reliability Commission of Texas (ERCOT), the grid operator for most of Texas, issued its first emergency alert at 12:17 a.m. on Monday, February 15. Barely an hour later, ERCOT announced “there is not enough generation available to meet current demand,” and that it would “instruct utilities to begin rotating outages.”

Wind was essentially a no-show. During the critical four-hour period from 10 p.m. to 2 a.m. when ERCOT was forced to begin rolling blackouts, actual wind output averaged less than 10% of the ERCOT load. At that time, [close to half of Texas’ wind turbines](#) were out of service because they were frozen. And the rest of them were operating at far less than capacity. It would be hard to overstate the disruption to the grid caused by wind’s unreliability that Monday.

**Figure 3**  
Actual Wind Output as a Percentage of the ERCOT Load  
02/15/2021



Source: ERCOT

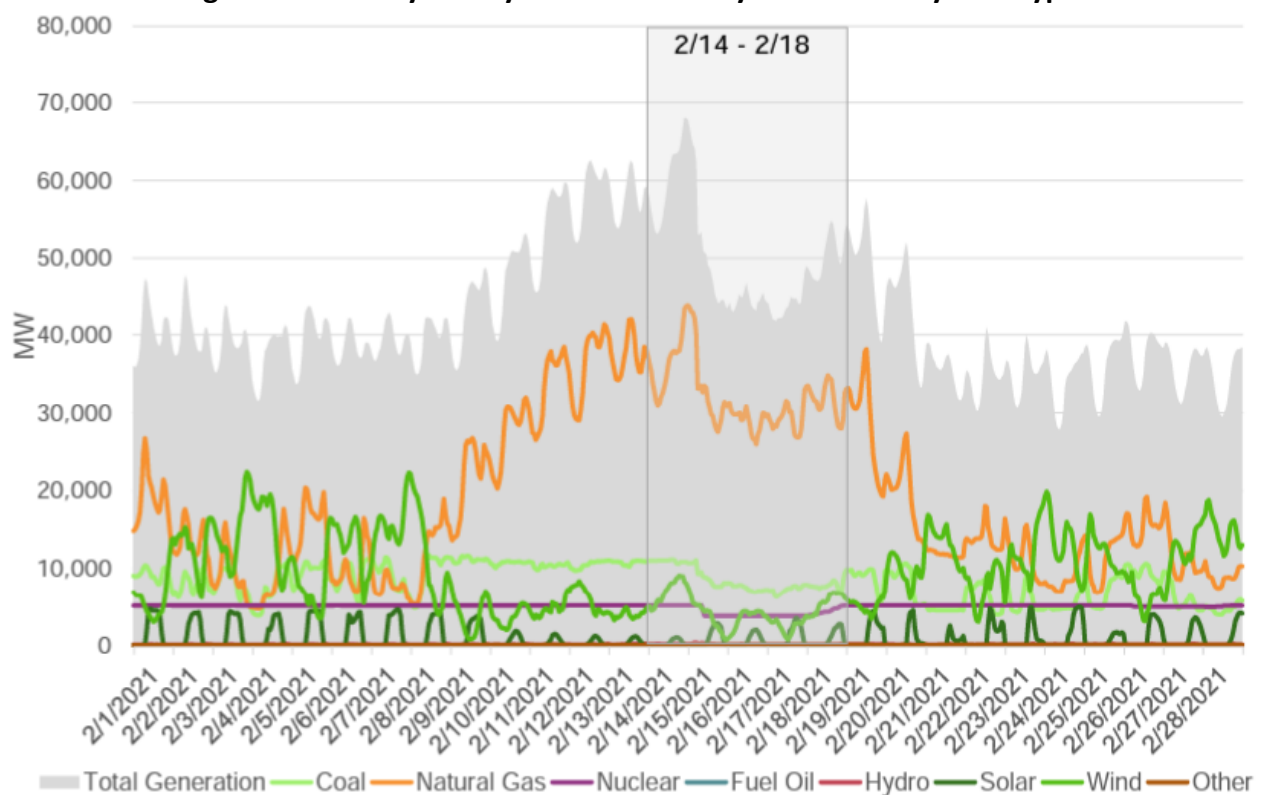
In one sense, though, wind’s defenders are correct when they say, “the wind is not solely to blame.” Solar energy also exposed the reliability problems of renewable energy. Where was solar, the most rapidly growing new energy source in Texas, Sunday night? Where solar is every night—off the grid, for the simple reason that the sun was not shining. Some might claim this is not a problem because solar is not designed to generate electricity at night. Yet, solar’s primary design feature also proved to be its main design flaw the first night of the blackouts.

The failure of renewables during the storm do not tell the entire story, however. As is often the case, it is important to examine what the generation investment in ERCOT would have looked like absent the incentives that brought renewables. [Robert Bryce calculated](#) the \$24 billion of

subsidies and other benefits offered for renewable energy in Texas attracted investment that would not have occurred otherwise:

Indeed, about \$66 billion was spent building wind and solar infrastructure in Texas in the years before the blackouts, yet all that spending was worth next to nothing when the grid was teetering on the edge of collapse during the early morning hours of February 15. For several hours, there was no solar production, and of the 31,000 megawatts of wind capacity installed in ERCOT, only about 5,400 megawatts, or roughly 17% of that capacity, was available when the grid operator was shedding load to prevent the state’s grid from going dark.

**Figure 4: February Hourly ERCOT Electricity Generation by Fuel Type**



Source: [TXOGA](#)

It is true that significant amounts of generation from natural gas went offline during the freeze. Yet Figure 4 shows that natural gas still provided the vast majority of electricity during the freeze. Wind and solar were minor participants. At the peak of the event, 20,000 MW of natural gas generation came offline. Meanwhile, of the combined almost [35,000 MW of installed renewable capacity](#) in 2021 (7,036 MW of solar and 27,448 MW of wind), [almost 30,000 MW](#)—86 percent of capacity—were offline at the time when the lights went off early Monday morning. One way of looking at this is that almost \$57 billion of the money spent to build renewable generation was wasted and was not able to answer the call when needed that night. This is a far higher percentage of failure than natural gas, coal, or nuclear generation.

The malinvestment in renewable energy is also why there are problems with reliability in the summer of 2022. In 2007, natural gas provided almost half (45%) of the electricity Texans used, with coal (37%) and nuclear (13%) providing most of the rest. Renewables made up only about 3%, with wind provided almost all of that. Today, those numbers have practically turned upside down. Renewables now vie for the [largest share of electricity](#) (36%; wind 30% and solar 6%). Natural gas' share of the market has dropped to 38%, coal to 17%, and nuclear to 10%.

On the surface, this does not seem to be a problem. ERCOT claims that Texas will have more than enough generation capacity to meet the projected record load this summer, with an [expected reserve capacity](#) (generation capacity over expected demand) of between 1,252 MW to 9,970 MW. The problem with this is that the reserve levels are dependent on generation from renewable energy. ERCOT forecasts that 9,140 MW of solar and 9,363 MW of wind generation—almost double the highest projection of reserve capacity—will be available during peak demand. If the weather does not cooperate, the Texas grid will likely experience reliability problems.

The forecast also highlights the problems of the massive investment in renewable energy over the last 20 plus years. Even though ERCOT expects 18,503 MW of renewable energy to be available at peak demand, this is only 39.8 percent of the [total installed capacity](#) of wind and solar (46,537 MW) in Texas. If the \$66 billion invested in renewable energy had been invested instead in, say, natural gas generation—which is expected to operate at 90 percent or more of capacity, ERCOT would have larger and more reliable reserves than it does today.

ERCOT would also have a much younger natural gas fleet with fewer maintenance problems than today's aging fleet. A new fleet would be better able to withstand the demands of the summer heat. And would have been better able to withstand the winter storm.

The problem during the winter storm was not that Texas had blackouts, the problem was that the blackouts were largely uncontrolled. The failure of renewable generation meant generation capacity was so low that ERCOT could not rotate the blackouts. Some homes and businesses were without power—and heat—for days. The lack of electricity also resulted in several areas, such as much of Austin, losing water for days as water systems lost power. If, however, the system would have consisted largely of natural gas, coal, and nuclear generation with new generation plants built in place of wind and solar generation, it is almost certain that there would have been adequate generation to at least have maintained controlled outages. Thirty-minute rolling blackouts across the state would have been only a minor inconvenience, rather than the human and financial catastrophe that occurred. But the politicization of the market, led by proponents of renewable energy and more regulation of the market, made that outcome an impossibility. And makes uncontrolled blackouts more likely during the summer.

## The End of Affordability and Market Competition in ERCOT

The management of the Texas electric grid is as politicized today as it has ever been. The politicization exposed itself in the days after the winter storm last year when Gov. Abbott, PUC commissioners, and the Texas Legislature refused to reverse the PUC's arbitrary and capricious decision to raise prices to \$9,000 per MWh. This meant that Texas consumers and numerous businesses were left footing the bill for the total value of electricity during the week: [\\$59 billion](#), which was more than market costs had totaled over the previous two years combined. But political pressure from the natural gas industry and some generators that had made [billions of dollars in profits](#) from the decision kept Texas policymakers from reversing the PUC commissioners' decision to intervene in the market by raising the price of electricity.

Thus, today we have a market attempting to build generation adequate to maintain reliability while at the same time paying off the billions of dollars of debt imposed on the market by Texas politicians and regulators. ERCOT, for instance, is sponsoring a [\\$2.1 billion securitization bond issuance](#) that will provide funds to companies that had to buy electricity at the \$9,000 wholesale price. The cost of these bonds will be added to consumer's electricity bill. As will the cost for paying off bonds offered by providers like Rayburn Country Electric Cooperative, Inc., which recently [issued a bond package](#) valued at \$908 million. Additionally, "the state, by the end of the summer, will sell another \$3.4 billion to pay off natural gas suppliers in one of the largest bond issuances in Texas history" ([Tomlinson](#)). This securitization of debt caused by the winter storm was authorized by the Texas Legislature, which decided to add new fees to our electric and gas bills over the next 30 years instead of reversing the PUC's price hike.

The end of affordability and competition is also being accomplished through ERCOT's politicized management of reserves. We saw earlier how ERCOT had attempted to use ancillary services to procure electricity to keep market process low. Now, however, ERCOT appears to be using its authority to procure reserves in a way that increases electricity prices. Matt Welch [describes](#) what is happening:

At a high level, state leaders have directed ERCOT to procure much higher levels of electricity reserves than in the past and to overuse an obscure mechanism called the "reliability unit commitment," or RUC, to do so.

Some levels of reserves are necessary in the event that demand is higher than projected or an operating power plant breaks down. And while it is bad to have too little reserves, you can also over-procure reserves, forcing consumers to pay for too much. The monitor notes that ERCOT is procuring too many reserves too often; that it has recognized little, if any, reliability benefit; and it is costing ratepayers a lot of money. The monitor estimates that these higher levels of reserves cost ratepayers up to \$400 million for the second half of 2021.

To procure these excess reserves, ERCOT is also misusing the obscure reliability unit commitment tool that had previously been used sparingly to mostly help alleviate

transmission congestion. While the commitment is sometimes necessary to ensure reliability, it is not designed to be used as frequently as it is currently being used, which is up 2,000% from 2020 to 2021, causing huge market distortions, muting price signals and imposing unnecessary costs onto consumers without providing any notable reliability gains.

Using the reliability unit commitment in this way also has the impact of increasing wholesale market prices, sometimes far above what they normally would have been during the same grid conditions. Its use is essentially inducing scarcity pricing when there is no actual scarcity in the market.

The RUC mechanism was designed for [emergency use](#), but now has become a daily routine. Potomac Economics, the company contracted by the state of Texas to be the official monitor of ERCOT's wholesale market, describes how ERCOT's use of the RUC mechanism is incompatible with the operations of Texas' competitive, energy-only market:

While we continue to believe that an energy-only market can be successful and adapt to changing system needs, it is not compatible with ERCOT's current conservative operational posture. The distortion in the market's economic signals will diminish generators' expected revenues, which ultimately will threaten ERCOT's resource adequacy. (7)

Unfortunately, there seems to be no willingness among Texas' elected officials, regulators, or generators to maintain the energy-only market that at [one time was considered](#) "the most competitive electricity market in the world.

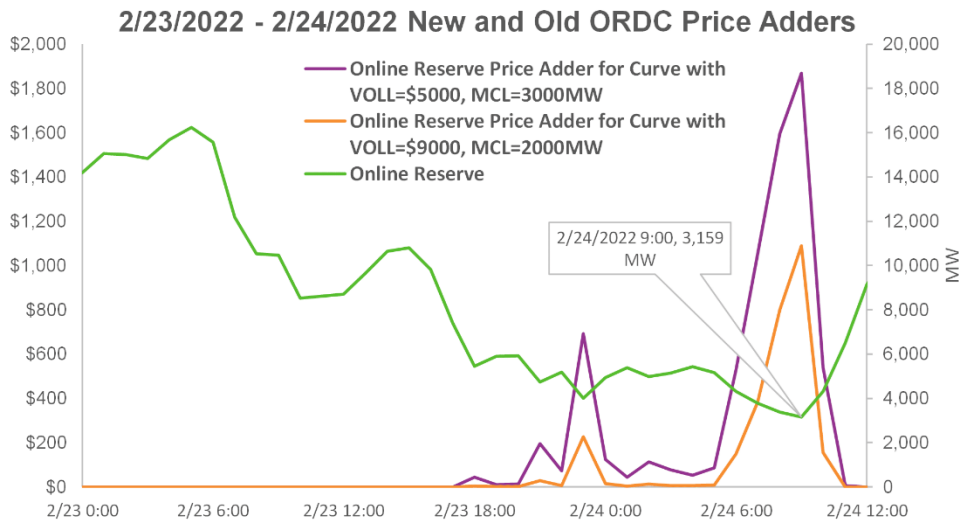
Instead, regulators at the PUC, under the direction of the Texas Legislature and Gov. Abbott, have undertaken a restructuring of the Texas electricity market. At a [July 2021 press conference](#), PUC Chairman Peter Lake was asked if a "capacity market was on the table" in the conversations about market restructuring. He responded by saying, "That was not addressed in legislation by the 87th Legislature." Nonetheless, actions taken by the Texas Legislature, the PUC, and ERCOT point to the end of the energy-only market and the onset of a de facto capacity market in Texas.

One thing the PUC has done was order ERCOT to expand the use of the ORDC as of January 1. The ORDC is one of several "price adders" in use in ERCOT that artificially raises the price of electricity under certain conditions. The expansion in the ORDC was put in place at the same time the whole sale price cap was lowered from \$9,000 per MWh to \$5,000. To the public, this may look like an effort to lower prices, but in practice the result is higher prices.

The effects of the change can be seen in the operation of the ORDC on February 23-24 of this year. The orange line in Figure 5 shows that the old ORDC would have increased electricity prices by close to \$1,100 per MWh at the lowest level of reserves on Feb. 25. The updated ORDC, however, added about \$1,900. Both price increases are far below the old and new price caps; neither does anything to relieve consumers of higher prices. The truth is that prices rarely

reached the \$9,000 per MWh price cap and when they did, they stayed there only briefly. The only exception to this was when the PUC ordered prices to \$9,000, even though the market was priced around \$2,000 at the time. The primary result of the change to the ORDC is that generators get paid for the electricity they sell plus a de facto capacity payment determined by the ORDC. All at the expense of Texas consumers.

**Figure 5**



Source: [Enverus](#)

Another effort to transition Texas to a capacity market is a “proposal [that] would establish a formal standard for electricity reliability and require load-serving entities (LSEs) to procure sufficient resources to meet this standard if there is a projected supply shortfall across the entire ERCOT market.” [This proposal](#) was submitted to the PUC last September by the consultant Energy+ Environmental Economics (E3) on behalf of generators NRG Energy, Inc. and Exelon Corporation.

ERCOT has long projected reserve margins for periods of summer and winter peak demand. The projections have not always been accurate but have provided market participants with information for planning the direction of the market while giving policymakers an understanding of how the market is performing. The proposal from NRG and Exelon, however, would mandate “a formal standard for electricity reliability” that would result in payments to generators to maintain the required reserve margin. While not a capacity market as seen in the PJM market in the northeast, a mandated reserve margin is a capacity market that would eliminate the current energy-only market that is barely hanging on today in ERCOT.

The NRG and Exelon proposal would establish a capacity market through what they call “Load Serving Entity Reliability Obligation (LSERO).” This requires ERCOT to “project, on a 3-year forward basis, whether there are sufficient accredited resources to satisfy the seasonal reserve margin necessary to meet the [mandated] reliability standard. If the projections fall short, the



LSERO would be used to deliver payments to generators in an effort to increase reserves. It is estimated that this system would “[guarantee generators](#) an extra \$1.5 billion a year.”

As has been noted, Texas is the only market in the country where generators must compete primarily on price and bear the full costs of failure to do so successfully. Thus it should not be a surprise that the abandonment of the energy-only market and the shifting of risk to consumers has broad support within the generation community. More surprising is how some conservative policymakers and advocates have supported the move away from competition, especially in light of the higher prices regulation is bringing.

For there is no doubt that electricity prices are rising in Texas. Through March, the average price for electricity had risen by [more than 11 percent](#), up to 12.8 cents a kilowatt-hour. This was up from 10.8 cents in 2018. The Houston Chronicle [calculated](#) that average prices for people who sign up for new plans “have risen from 11.19 cents a kilowatt-hour in January to 18.48 cents” in June. The price hikes will continue as the costs from the winter storm, the ORDC, and capacity payments are added to Texans’ bills.

It must also be noted that consumers’ electric bills do not contain all the costs they pay for electricity. Added to this are higher income and property taxes from the tax breaks that wind and solar generators receive from the various levels of government. At the same time, competition is dying. Generators are increasingly turning to the government for income instead of the market. Capacity payments and renewable subsidies are replacing the profits of competition. And, despite promises from policymakers, all of this has done nothing to improve the reliability of the Texas electricity market. Instead, it is making it worse.

## **Restoring Reliability, Affordability, and Competition in ERCOT**

There is a path forward for restoring reliability, affordability, and competition to the Texas electric market. And despite the current politicization of the market, the path is relatively uncomplicated from a policy perspective.

### ***Eliminate All State and Local Renewable Energy Subsidies***

It is difficult to catalogue all of the numerous state and local subsidies and benefits that renewable energy receives in Texas today. However, some of these are renewable energy credits, the building of transmission (CREZ) lines to benefit wind and solar, forcing consumers to pay for the cost of connecting wind and solar generation to the grid, Chapter 312 and Chapter 313 property tax abatements, franchise tax credits for clean energy projects, etc. It is equally difficult to calculate their costs to Texas taxpayers and consumers, though the Energy Alliance has estimated the cost this year to be just over [\\$900 million](#). It is these subsidies and reduced costs that give wind and solar generators the ability to sell electricity below their costs and thus undercut the prices of competitors; what is sometimes known as [predatory pricing](#). To restore the ability of reliable generators using natural gas, coal, and nuclear fuels to compete on price against renewables, all state subsidies for renewables must be eliminated. Additionally, Chapter

313 property tax abatements, that are scheduled to expire this year, should not be renewed by the Texas Legislature in 2023.

***Maintain ERCOT's Energy-Only Market by Rejecting All Efforts to Establish a Minimum Reserve Requirement***

Whether through an LSERO or other means, Texas should reject any effort to mandate a reliability standard. Any firm or required reliability standard would bring an end to the energy-only market and import a northeast-style capacity market that has [proven to be a failure](#) when it comes to maintaining a reliable and affordable electricity market.

***Require Renewable Generators to Pay for the Costs They Impose on the Grid Because of Intermittency and Federal Subsidies***

A trademark of energy sources in the ancient world—wind-, solar-, and hydro-power—was that they were dependent on the weather. This characteristic was largely eliminated with modern energy sources, but federal renewable subsidies reintroduced the problem of intermittency to America's power grid. While Texas can do nothing itself to eliminate federal subsidies, it can take steps to mitigate the harm they cause. One cause of harm is the fact that subsidies have led to the investment of \$66 billion in wind and solar generation. The massive intermittency problem this has introduced requires that grid participants spend billions of dollars each year attempting to provide adequate backup when renewables go offline. Those costs are passed along to consumers. Texas should introduce a firming requirement on renewable generators under which they—rather than Texas consumers—would have to pay for the electricity they fail to deliver because of weather conditions.

Additionally, Texas should adopt some form of a minimum offer pricing rule (MOPR) that keeps renewable generators from using subsidies to support their predatory pricing practices. As Harvard economics professor William Hogan [explained](#), "Approximately 16,000 MW of wind capacity in Texas thus has an incentive to operate as much as possible, even at locational prices less than zero. . . . Subsidized wind energy is not only increasing the frequency of negative prices in ERCOT, it is decreasing prices in every hour that the wind farms are generating." The market, not regulators, should set prices. When it comes to responding to federal subsidies, this means Texas should stop the influence of the federal government on Texas electricity prices that often drives prices below zero by setting a minimum price for generators that receive federal renewable subsidies. Not only would this improve market price signals in ERCOT that would incentivize new reliable generation, it might also incentivize some generators to forgo federal subsidies.

***Eliminate the ORDC, the RUC Mechanism, and Other Ancillary Services That Hinder the Formation of Market Prices while Returning the Wholesale Price Cap to \$9,000***

Generators and regulators in ERCOT seem to suffer from some form of dissociative identity disorder. On the one hand, regulators go to great extremes to reduce market prices, yet have no problem with increasing prices through administrative measures and regulations. On the other hand, generators complain about low market prices but do nothing to oppose measures by regulators that lower prices even more. The Texas Legislature should eliminate the ability of the

PUC and ERCOT to set or manipulate market prices and allow high peak market prices to provide an incentive for generators to build new generation to meet Texas' growing energy demand.

### ***Incorporate Marginal Transmission System Losses into Pricing***

ERCOT currently pays generators for the amount of electricity they put into the system, regardless of how much of that energy is actually delivered to the end user. Line losses for transmission over long distances mean that wind and solar generators—that typically transmit electricity over longer distances—get paid for more electricity than their customers receive. The difference is made up by Texas consumers. All generators should be paid only for the electricity that reaches customers. This could save consumers as much as [\\$225 million](#) annually.

### ***Eliminate the PUC's Excessive Authority to Intervene in Market Activity***

Since 1999, the Texas Legislature has increased the PUC's authority to intervene in the market in numerous ways. This includes antitrust authority to stop potential market power abuse, emergency cease and desist authority, the ability to disgorge revenue, and authority to approve mergers and acquisitions. None of these have ever been used to benefit the market for the simple reason that the competitive market has served to keep the market healthy—at least when the PUC is not interfering with it. These and related powers of the PUC to intervene in the Texas market should be eliminated.

## **Conclusion**

Though regulators at the PUC and grid managers at ERCOT must share some of the blame for what has happened to the Texas grid over the years, the ultimate responsibility for the collapse of reliability, affordability, and competition in ERCOT rests with Texas' Legislature, governor lieutenant governor, and House speaker. For years they have supported giving billions of taxpayer and consumer money to corporations with multi-billion market caps while being unwilling to take on renewable energy.

The greatest danger that the Texas grid faces now is the political establishment's continued unwillingness to challenge the environmental left's and energy industry's push for subsidies. If this continues, Texas will lose what is left of its competitive energy-only market. Yet the possibility of restoring reliability, affordability, and competition to ERCOT remains. All Texas has to do is let the market work.



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The Energy Alliance is a project of the Texas Business Coalition to raise awareness of issues about the energy market that matter most to consumers: Reliability, Affordability, and Efficiency.

