

## **Climate Change Is Unpredictable: 14 Recommendations For Texas Regulators To Increase Reliability and Resiliency in the Face of an Uncertain Future**

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Like many of you, my life has been turned upside down the past two weeks. Our power went out for about four days, our water pressure was out and the church we attend was turned into a shelter for older Austinites and a water distribution area. We are all looking for someone and something to blame, and there has been a whole lot of finger-pointing. With my testimony, I want to outline with clarity how decisions about our power grid are made, what tradeoffs were made, who benefited, who paid, and ultimately end with 14 recommendations for moving forward.

The very folks who have fawning over our independent, energy-only market—overseen by the independent and professional employees at ERCOT (Electric Reliability Council of Texas)—are now suddenly declaring that they are an out-of-control, quasi-state entity that is incompetent and corrupt. As if ERCOT is not actually overseen by the Public Utility Commission, whose commissioners are appointed by Governor Greg Abbott. And as if somehow PUC policy is not overseen by the Texas Legislature, which passed the laws that deregulated our market, and declined previous opportunities to interconnect our electric grid with the Western and Eastern Interconnects, in large part because of fears of federal overreach. Some people -- sometimes the same folks -- are quick to blame wind energy, as initial reports showed that some turbines in West Texas were not operating as expected due to frozen blades and controls. Still others -- often groups like the Sierra Club, to be honest -- say all fossil fuels are at fault. In reality, subsequent reports confirmed that while some wind turbines did freeze in the ERCOT market, the vast, vast majority of problems occurred at gas and coal plants, with some 30,000 MW of fossil fuel plants failing to operate—roughly three times the amount of West Texas wind that had issues.

In that regard, I urge you to ask ERCOT how the fuel sources did and believe them. The data is real.

What it is likely to show is that wind suffered at the beginning of the storm as blades froze up when wind was weak, and then as wind picked up failures happened. But once these initial issues were resolved, wind performed as expected. Gas, coal, and nuclear plants did alright initially, but once the frozen conditions continued, far too many pipelines, instruments, water, and even gas at the wellheads froze up. And the competition between gas for heating homes and powering our grid was real, leading to massive failures. What's the common issue? The lack of required winterizing for power plants.

Now let's continue with some more facts.

The Texas Legislature chose to deregulate much of our ERCOT market more than 20 years ago, but not completely. Transmission (poles and wires) is regulated by the PUC. Areas closed to competition like municipal utilities and electric cooperatives are regulated by their own governance structure, with some PUC oversight. But generators (major power producers) and retail electric providers (consumer electricity sellers) have minimal oversight. Thus, competitive rates are not regulated -- retail electric providers in the competitive market can largely charge what they want -- though the PUC has broad authority over price gouging, market manipulation, and other schemes. Similarly, generators are not supposed to hold back power if they choose to compete in our market, but they can decide to offer power at the price they want to be paid, and they are allowed to go offline when they want and decide how much to run. Indeed, we rely on a market where prices are expected to rise when demand goes higher, thus providing an incentive for energy investment. The choice to allow our market to rise to \$9,000 per MWh in times of scarcity -- a decision that was reinforced by the PUC just last week -- is not ERCOT's decision. It is the PUC's decision, which over the last decade has raised the maximum price cap from \$1,000 per MWh to \$9,000 per MWh. Again, PUC is the policy maker, ERCOT is the implementer of those policies.

In most cases, like in 95% or 99% of the nearly 8,760 hours in a year, the market has worked relatively well for most Texans. Electricity prices are low, the system overall is very reliable, and newer technologies like wind, solar, and more recently battery storage have been able to enter the market, make money and thrive, bringing cleaner energy to our state grid.

But there are some cracks. Because the system is deregulated, we don't require generators to do a lot in terms of reliability. Thus, we rely on our ancillary services and emergency response services to keep our system operating, rather than the generators themselves. Thus after a previous disaster -- a 2011 February freeze -- that led to similar strains on our system, there were investigations by both the federal government and our own Public Utility Commission. While the feds came up with some [lengthy solutions](#) (most of which were not implemented) the PUC worked with ERCOT to do one important -- but largely unenforced provision: generators should come up with weatherization/winterization plans, and file those each year with ERCOT. Those plans are confidential (as they contain some market information that could be used by competitors) but they are filed. A requirement for third-party inspections never happened. Do generators actually have good weatherization plans? We don't know. Is there an inspection to make sure they do what they say? No, it is just a paper exercise. Has anyone set minimum requirements or even best practices? Apparently not.

The reason that so many generators failed to keep our lights on in Texas is because -- in our deregulated energy-only market that the vast majority of state politicians support -- we did not require our generators to meet some state-established best practices to weatherize plants for a changing climate, and we did not even inspect the weatherization plans they came up with. We relied on the market to save us, and it didn't.

So before blaming ERCOT, legislators, Lt. Governor Patrick, and Governor Abbott might want to point their fingers back at themselves. After all, the PUC and ERCOT were under Sunset Review in both 2011 and 2013, and the legislature chose not to deal with these issues.

Another reason our state leadership didn't prepare enough is because they have not acknowledged that climate change is real. Many elected leaders in Texas may privately acknowledge our summers are getting hotter, hurricanes are getting worse and more frequent, and episodes like polar vortices (caused by a warming northern pole) are getting worse, but their policy making has categorically failed to protect the people of Texas from climate disruption. In other words, our state leadership, energy companies, and ERCOT bet on weather patterns being pretty similar, which means they bet that events like 2011 just wouldn't happen that much. As an example, ERCOT's CDR assumes that even the hottest period of 2011 won't happen again, nor the 2011 winter freeze, and it certainly doesn't contemplate an event like the 2021 polar vortex.

Last week, we had millions of Texans without power, thousands in shelters or paying high prices for hotels, burst pipes, deaths on highways, deaths and hospitalizations from hypothermia, empty rows of food at supermarkets, and incredible suffering and confusion. Particularly hard hit were the urban poor, who did not have access to transportation (or even shelter in some cases), and who often live in homes without proper insulation, windows or proper building materials. In other words, while millions of Texans suffered, the suffering was not felt evenly -- it fell harder on the urban poor, particularly Black and Brown Texans living in major cities like Austin, San Antonio, Dallas and Houston.

There were failures in terms of not only poor planning by ERCOT, but also poor communication with officials, and seemingly little planning by local utilities about what to do when they were instructed by ERCOT to begin rolling outages. Texas's most economically disenfranchised individuals were those most impacted by the freeze, as, for example, elderly people living in apartments in East Austin Section 8 housing who could gaze over at the brilliantly lit up highrises of the well-heeled in downtown Austin. I know this happened because while my U.S. Senator Ted Cruz flew off to Cancun, I volunteered -- with my daughter -- at my church for two days taking care of them. They literally had nowhere else to go because shelters were already full.

So what can this legislature do, short of re-regulating the market or completely integrating ERCOT to the western or eastern interconnect, to put Texas on a more sustainable path?

1. Incorporate climate mitigation and resiliency planning into our state PUC, RRC, TCEQ strategic plans, including our ERCOT transmission, long-term system assessment, and Capacity Demand and Reserve reports. There are already bills filed in the legislature that could help.
2. Require that if generators want to compete in our energy-only market with prices that can go up to \$9,000 per MWh (which happened last week) they must winterize and

weatherize both for winter freezes and the hottest summer days. Let's order the PUC to come up with minimum standards, require annual reports subject to independent review and approval, and require an inspection process. If you wanna play, you gotta invest. Wind, gas, coal, nuclear, solar, storage: winterize for next year and make sure you can operate when it gets really hot as well. Same goes for the Summer And please let's not have the state pay for winterizing plants in our energy-only market. That is a corporate subsidy that is not fair to the people who have suffered.

3. Require the RRC to come up with best practices for winterizing our gas lines and wellheads so that the gas we rely on for the moment -- right now gas provides roughly half of our electricity needs -- can actually get to market even as we transition away from fossil fuels. And make oil and gas companies invest to meet these standards.
4. Lift the cap on the budget at ERCOT for emergency response services (ERS). We have ERS services (demand response from commercial and industrial customers to shut down when reserves get tight as well as back-up generators) but the annual budget is only \$50 million -- which was set by the PUC in rules -- meaning we are not taking advantage of these contracts to avoid brown-outs. If we had had double the emergency reserves, much of the problems we faced in these past days could have been averted.
5. Raise penalties for market manipulation and reliability failures from the current \$25,000 per day cap at the PUC to at least \$100,000. This was a recommendation from the Sunset Commission which was rejected in 2013, even when then Rep. Sylvester Turner tried to add it to the sunset bill on the House floor. Let's make companies pay if they manipulate the market, or if their largesse causes reliability failures.
6. Order PUC and ERCOT to reexamine and revise our "ancillary service" requirements. All loads in ERCOT are required to contract or buy services to ensure the market is reliable. We have frequency reserves, regulation up, regulation down, and contingency reserves often called "non-spin" reserves. While ERCOT just recently revamped their requirements, the Legislature should order ERCOT to work with the PUC and stakeholders to look at tweaks (and make them). Do we need a bigger contingency reserve? Do we need a more flexible competitive market for ancillary services? Sierra Club has concerns about moving to a full-fledged capacity market, but additional requirements for our ERS and ancillary services could probably prevent future problems. To be clear, I do not believe we need a 25% reserve requirement as some are suggesting, but we might need additional contingency reserves that are open to all able to meet performance standards.
7. Continue to modernize our system with clean energy. Wind and solar are now providing a quarter of our total energy, and we should allow them to grow as they lower prices and work as advertised. Don't move backwards on incorporation of these and other newer technologies. ERCOT is at the start of a three-year process to co-optimize energy and ancillary services, incorporate local distributed generation technologies like solar and small gas plants, and fully incorporate electric storage into our market. While details are still being worked out, ERCOT's so-called Passport Project must move forward. If we had all of our smaller resources, plus ancillary service and storage fully integrated into our current market (heavily dependent upon last year's technology) we might avoid

incidents like this in the future. Distributed generation is located closer to home and can avoid problems with transmission lines.

8. Weatherize homes, not just power plants. Don't forget energy efficiency and demand response. Those living in homes with sub-standard insulation, weather stripping and other energy efficient technologies got colder faster, and we could do so much more to reduce energy waste. Energy efficiency should be our "first fuel" since it is the cheapest, and Texas has not fully embraced the need for robust energy efficiency and demand response (shifting the time when homes and businesses use energy). Texas must update our Energy Efficiency Resource Standard, which is stuck at 2011 levels even as other states passed us by. SB 243 would raise our energy efficiency standard from roughly 0.2 percent of use to 1 percent of sales over the next four years. That would be a good start. Does it cost money? Yes, we pay for these programs through the Transmission and Distribution Utility rates, but they currently cost less than 75 cents per month on most bills. And they provide real savings to energy customers (particularly those facing energy burdens) and better prepare us for the future. ERCOT assumes we get about 2,000 MWs of energy efficiency from these programs, but we could be lowering overall demand by 10,000 MWs with a robust energy efficiency and demand response program.
9. In addition to energy efficiency goals for transmission companies, we must take advantage of our "smart" meters (that utilities make ratepayers pay for) by making them smart, and fully incorporating energy management and demand response into our market. Some simple changes to enable both retail electric providers, but also customers and third parties could unlock the ability of customers to react to prices and turn down thermostats and air conditioning (and lighting) almost instantly in times of trouble -- or simply to save money.
10. Upgrade building codes. Our building stock is relatively old, and while the state has done a good job on adopting energy codes (we are currently at the 2015 International Energy Conservation Code), overall our based building codes are behind the times. State statute still has us at the 2000/2001 International Residential Code, and our counties have very limited ability to adopt and enforce codes to upgrade our building stock to make it more resilient to our changing climate. Of particular concern are buildings in counties on the Gulf Coast. Older codes are not built for hurricanes or for freezes, and updating our codes must be a priority. Important bills have already been filed but more must be done.
11. Unleash distributed solar and storage. To make solar and storage work for Texas, first we need to make sure we aren't putting up barriers to greater implementation. Bills like SB 398 by Sen. Menendez, which would adopt a solar bill of rights to prevent cities and other entities from making it hard to install local solar and solar plus storage systems in Texas, would be a good start. Community solar is another option but some current ERCOT and PUC rules make it hard for community solar to fully compete in our market. The Legislature should change that.
12. Take a transmission decongestant. We have huge congestion problems in Texas, and bills like HB 1607 (economic and bulk transmission planning) and SB 415 (storage as a transmission solution) would help us solve some of these congestion problems so

generation could get to load. We should also explore interconnections with other grids, even as we need to solve our own generation transmission constraint issues.

13. Don't waste methane. Methane, or gas, is a product in wide use, from our stoves to our power plants. But in the atmosphere it is a waste and a danger. It is a pollutant and climate disruptor. Let's stop putting it in the air. Tax it. Capture it. HB 1452 by Rep. Rosenthal would require the RRC to come up with regulations and incentives to end flaring by 2025. HB 896 by Rep. Reynolds would create state methane standards at the TCEQ.
14. Reform the rules for upset emission events. When the temperatures dropped, ERCOT and TCEQ requested that air quality rules for refineries and other major polluting sources, including power plants, be suspended. The health effects of this aspect of last week's tragedy might not be fully realized for some time, but it underscores how uneven the impacts this disaster were on fenceline communities, which are often low income communities of color. While there may be individual cases where some rules may need to be suspended, our state is always quick to protect polluters, and not our communities.