

5 Reasons Why a Federal Takeover of Texas' Electric Grid Will Hurt Resilience

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Introduction

The people of Texas have long been noted for their independence, and for doing everything just a little bit bigger. One unique distinction which Texas holds is being the only state with its own fully intrastate electric grid, overseen by the Electric Reliability Council of Texas (ERCOT). Now, some in Washington are trying to break Texas' independence streak by lassoing the state into the national electric grid, which has its own failures and challenges.

In a press release on Valentines Day, Congressman Greg Casar (D-Texas) [announced](#) the introduction of the "Connect the Grid Act" which would force Texas to submit oversight and management of its own electric grid under the authorities of the federal government, specifically the Federal Energy Regulatory Commission (FERC). While the release states that by "connecting the ERCOT grid, all Texans and Americans would have more reliable electricity, saving lives in future natural disasters," nothing could be further from the truth.

Both Greg Casar and his "Connect the Grid Act" co-sponsor Alexandria Ocasio-Cortez¹ ran for office as members of the Democratic Socialists for America (DSA)², and were supported by the Sunrise Movement, a nation-wide political organizing group created to push the Green New Deal.³ Both the DSA and Sunrise were extremely active in the aftermath of the February 2021 Texas Ice Storm, demanding that Texas's grid be subjected to federal regulation and hounding Texas energy companies with disruptive protests.⁴

The truth is, forcing Texas to give up grid independence will do nothing to improve the reliability of Texas residents' power and would subject them to the same failed resilience standards which are in place nationally. What follows are five reasons why Texas must refuse to give up grid independence and a few steps the Lone Star State could take to genuinely lead the nation in electric grid resilience.



Representative Alexandria Ocasio-Cortez (D-NY) is joined by Congressman Greg Casar (D-Texas) and Senator Ed Markey (D-MA) at a press conference introducing the [Connect the Grid Act](#).

1 – Federal Rulemaking in Grid Reliability and Security is Onerous

On August 14th, 2003, a sagging powerline contacted an untrimmed tree branch in Ohio, causing a cascading failure of a massive portion of the electric grid in the northeastern United States, putting 55 million people in the United States and Canada without power, some for up to two weeks.

The massive outage, during which utilities lost between 60,000 and 70,000 megawatts of power (remember that number) came to be known as “The Great Northeast Blackout of 2003” and it forced the federal government to establish a standard for “vegetation management.” The [first iteration](#) of that standard took the industry nearly three years to initially develop. Then, [it took FERC nearly a decade](#)

[to approve](#) a “final rule” for Transmission Vegetation Management on March 28, 2013.

Such a time consuming and onerous process is the rule, not the exception when it comes to federal government and industry efforts to establish reliability and security standards. Michael Mabee, a Texas veteran and grid vulnerability expert explains:

Much of the grid is self-regulated (similarly to Wall Street). The federal government under current law can’t tell “the grid” what to do. The [North American Electric Reliability Corporation \(NERC\)](#) is a not-for-profit corporation. It acts as the self-regulatory organization “whose mission is to assure the reliability



Times Square Blackout - Broadway and 7th Avenue and 45th Street - NYC Blackout on Thursday 8/14/2003 at 6:34PM. Brecht Bug - Flickr - Licensed under [CC BY-NC-ND 2.0 DEED](#)

of the bulk power system (BPS) in North America.” The [Federal Energy Regulatory Commission \(FERC\)](#) is an independent federal agency that regulates the interstate transmission of electricity, natural gas, and oil. FERC’s specific authority over the electric grid is to “oversee the reliability of the bulk power system.” The regulatory scheme of the grid between NERC and FERC is mind-numbingly complex. (Just the way most industries prefer their relationship with the federal government to be.)⁵

In other words, putting the Texas electrical grid under the control of FERC doesn’t increase the government’s ability to regulate the grid or guarantee any improvement to ensure reliable power service for Texas residents. All it does is intertwine Texas into an

even more complex system, making it even harder to carry out genuine reliability improvements which are necessary (about which more will be said later.)

Indeed, rather than improving Texas’ reliability and safety standards, tying Texas into the national grid would result in utilizing the same dangerously ineffective standards that presently govern the national grid.

In contrast, following Winter Storm Uri, the Texas legislature moved swiftly to respond to the very real failure of the Texas electrical grid, implementing resiliency requirements which many experts have urged FERC to adopt at the national level. (More on these improvements in the section “Texas Can Lead the Nation.”)

2 – Federal Oversight on Grid Security Lacks Transparency

Incredibly, not only is the electric power industry allowed to write its own reliability and security standards and not only does the federal government have an abysmal track record in ensuring that these protection standards are adequate, but the federal government covers for utilities that violate the already inadequate standards.

Currently, FERC and NERC withhold the names of electric utilities that violate Critical Infrastructure Protection (CIP) standards supposedly to keep confidential information that may aid potential adversaries.

This practice began in July 2010 and has persisted to the present time, allowing utilities to avoid scrutiny from the public, investors, Congress and even state regulators when they repeatedly violate standards, placing the public at grave risk of blackouts or other grid-related dangers.⁶

Mabee conducted a multi-year investigation into this lack of transparency, filing hundreds of Freedom of Information Act (FOIA) requests with FERC to reveal the identities of nearly 1,500 companies who have violated grid security and reliability regulations over the past 14 years.⁷

The investigation revealed a massive cover-up by FERC who has denied nearly all of these FOIA requests, leading Mabee to [file a lawsuit](#) against FERC seeking that the Court order the agency to release the names of grid security violators. This case is still being considered in the United States District Court of Washington D.C.

Why does transparency matter?

Take the example of Pacific Gas & Electric Co. (PG&E). FERC tried to cover up PG&E's identity when the company was subjected to a \$1.7 million dollar regulatory fine for cybersecurity violations. PG&E's [identity was exposed](#) through a Freedom of Information Act (FOIA) request. At the same time, we also became aware that the identities of companies who violated the [transmission vegetation management](#) standard in the western interconnection – which includes California – were being covered up.

The public has no way of knowing if any of these violations were conducted by PG&E because this information is withheld from the public. We do know that these violations – and the ensuing cover-up – occurred in the same location where over 86 deaths occurred in the “[Camp Fire](#)” – the deadliest and most destructive wildfire in California history. Eventually, PG&E was convicted of manslaughter over this deadly fire and forced into bankruptcy – leaving the citizens of California on the hook to bail out the company financially.

Increased transparency and public scrutiny of regulatory violations would lead to the utilities taking these regulations more seriously. But, for now, this won't happen under the watch of the U.S. federal government. The opacity of the federal regulation system means that if Texas is forced into the federal regulatory scheme it would be even harder to hold Texas power providers accountable.



Screenshot from CNN reporting on 2013 sniper attack on PG&E's Metcalf transformer station in California.

3 – Federal Government Lacks Vigilance on Grid Physical Security

Texans might wonder whether the federal government which is actively interfering with their state's efforts to secure the southern border would do any better managing the physical security of Texas' electric grid. The answer is unequivocal: it won't.

The federal government has been just as opposed to walls, fences and security around electrical infrastructure as it has been on the border.

Over forty years ago, in May 1981, the GAO published a report entitled "Federal Electrical Emergency Preparedness Is Inadequate," warning that the nation's electric power systems were "very vulnerable to disruptions from acts of war, sabotage, or terrorism," and that the "Federal Government is not now prepared to handle a long-term national or regional disruption in electric power."

Fast-forward twenty years to 2013 and a spectacular coordinated attack on PG&E's Metcalf transformer station in California brought the lack of grid physical security to the attention of Congress. At the time, the electric utility industry argued against the need for a physical security standard, but the government ordered the industry to write a physical security standard anyway. But the resulting standard the industry was forced to write exempted most facilities from actually complying and required no actual physical security measures be taken. Not surprisingly, physical attacks against the electric grid continued.

A decade later, after attackers used rifle fire to take down two electrical grid substations in Moore County, North Carolina, leaving 40,000 citizens without power in December 2022, the Federal Energy Regulatory Commission (FERC) – the U.S. agency responsible for approving the physical security standards for the nation's bulk electric system– announced a joint technical conference with North American Electric Reliability Corporation (NERC), the organization



Michael Mabee speaks with 60 Minutes about electric grid vulnerabilities and government inaction to enhance its weaknesses.

responsible for developing grid reliability standards and enforcing compliance to regulations, to discuss physical security.

In predictable fashion, the electric utility industry once again went on record that no further enhancement of grid security standards were necessary. For years, this has been the standard response of the people in charge of grid safety.

According to data submitted to the Department of Energy by the electric power industry, physical attacks have resulted in electric disturbances in 1,167 cases from January 2010 through December 2023 – a rate of nearly 1.5 attacks per week.

Last fall, Mabee and I authored an article in the [Washington Times](#), showing that “when it comes to protecting America’s electric grid, the U.S. government has been missing in action for decades.”

A [CBS’ 60 Minutes](#) episode on the topic of grid

vulnerabilities demonstrated how despite tracking physical attacks on the electric grid and lodging numerous [complaints](#) to FERC about the abysmal track record of the government to require and enforce physical security protections for grid infrastructure, nothing has been done.

Nationwide efforts to improve electrical grid reliability and security, such as the “Secure the Grid Coalition” (which the Center sponsors) have been repeatedly rebuffed, despite urgings from [well-known public leaders](#) such as former Director of Central Intelligence R. James Woolsey and former House Speaker Newt Gingrich [to encourage FERC to enhance physical security](#) of the grid.

Over the past nine years however, FERC has declined to order an overhaul of an obviously ineffective physical security standard despite numerous formal complaints and petitions.



FBI Director Christopher Wray testifies before the House Select Committee on the Strategic Competition Between the United States and the Chinese Communist Party in Washington, D.C., on January 31, 2024. Image: [FBI.gov](https://www.fbi.gov)

4 – Federal Government Lacks Vigilance on Malware and Supply Chain Threats

Malware:

On January 31, 2024 FBI Director Christopher Wray [testified before the House Select Committee on the Chinese Communist Party](#), stating:

“China’s hackers are positioning on American infrastructure in preparation to wreak havoc and cause real-world harm to American citizens and communities, if or when China decides the time has come to strike.”

He also said that there’s been “far too little public focus” on the types of cyber threats that affect “every American.” A month earlier, [Wray testified before the Senate](#) saying “I see blinking lights everywhere I turn”

– harkening back to the ignored warnings prior to the 9/11 attacks.

Consider these additional “blinking lights” over the past decade:

- In 2007, government and industry engineers at the Idaho National Laboratory demonstrated that a large electric generator, such as those used in the grid, can be remotely destroyed by rapidly manipulating its on-off function. The vulnerability was given the term “Aurora.” Our electric power industry and other critical infrastructures are still open to such an attack sixteen years later. FERC has refused to address the vulnerability.
- On November 20, 2014, Director of the National Security Agency Admiral Michael Rogers [testified](#) before the U.S. House Select Intelligence Committee that “foreign cyber actors are probing America’s

critical infrastructure networks and in some cases have gained access to those control systems.”

- On December 2, 2014, cyber security vendor [Cylance published its “Operation Cleaver” report](#), demonstrating that Iran-based hackers had compromised at least one U.S. electric generation company.

- On December 23, 2015, a cyberattack struck the Ukrainian grid causing 225,000 customers to lose power, using malware called “[Black Energy](#).”

- On December 17 and 18 2016 the Ukrainian power grid was again attacked, causing another blackout. This time with malware called “[Crash Override](#).”

- In December of 2016, the U.S. Department of Homeland Security (DHS) and the Federal Bureau of Investigation (FBI) [publicly reported](#) on a Russian developed malware tool, called “[BlackEnergy](#)”, identified as being present in America’s energy sector.

- “[Crash Override](#)” the malware that took down the Ukrainian electric grid [is a threat to the U.S. electric grid](#).

- In June 2021, Secretary of Energy Jennifer Granholm [admitted to CNN](#) that adversaries are capable of shutting down the U.S. power grid.

- In August 2023, The New York Times reported the [discovery of malicious Chinese malware](#) embedded deep inside networks controlling “power grids, communications systems and water supplies that feed military bases in the United States and around the world.” Officials believe the malware has the ability to adversely affect the civilian sector as well.

The non-profit [Foundation for Resilient Societies](#), joined by other grid security advocates, petitioned

FERC in 2017 to address the growing cybersecurity threat with stronger rules that would require the industry to locate, mitigate, and remove malware from the grid. In response to these petitions, the electric power industry, including industry lobbyist the [Edison Electric Institute—whose members include companies owned by the government of the People’s Republic of China](#)—claimed that additional cybersecurity protections would be “unduly burdensome” and “unnecessary.” The federal government agreed and in an order issued on December 28, 2017, FERC announced its [decision](#):

“We decline to propose additional Reliability Standard measures at this time for malware detection, mitigation and removal, based on the scope of existing Reliability Standards, Commission directed improvements already being developed and other ongoing efforts.”

To this day, there is no federal enforceable requirement for the detection, mitigation, or removal of malware in the U.S. electric grid.





Screenshot from Wall Street Journal [article](#) reporting on the seizure of a Chinese-built transformer.

Supply Chain:

At the port of Houston in the summer of 2019, the Trump Administration's Department of Energy [seized a massive Chinese-manufactured transformer](#) and transported it under federal escort to Sandia National Laboratories. The transformer was inspected, and the detailed findings are highly classified. "They found hardware that was put into [the transformer] that had the ability for somebody in China to switch it off," said Latham Saddler, the former Director of Intelligence Programs at the National Security Council in the Trump administration.

On May 1st, 2020, President Trump declared a "Grid Security Emergency" and issued an executive order on "[Securing the United States Bulk-Power System](#)" to stop the importation of these transformers. At the time, the U.S. grid contained about 300 Chinese transformers. On President Biden's first day in office, he suspended the order, opening the floodgates to

the importation of Chinese transformers. [Numerous formal complaints](#) on this matter to FERC have been largely ignored. On February 16th of this year an [additional warning to FERC](#) indicated that our nation has now imported 449 Chinese transformers. Thus far, there seems to be no appetite among the federal government agencies of the Biden Administration to address this looming threat.

In contrast, Texas was the first state to pass [infrastructure protection legislation](#) which mandates that foreign entities from known bad cyber-actors including China, Russia, Iran and North Korea be banned from participating in contracts related to Texas critical infrastructure. Several states have subsequently followed suit. (For more on the Lone Star Infrastructure Protection Act, see: "Texas Can Lead the Nation.")



March 1989 magnetic storm damage to a high-voltage transformer at a nuclear power center in Salem, New Jersey. Photo credit: [Dr. Jeffrey J. Love, USGS](#)

5 – Federal Response to Electromagnetic Spectrum Threats is Dishonest and Dangerous

Confronted with the effects of a more than 100-year winter storm event, the Texas legislature moved quickly to pass a serious weatherization standard. In contrast, Federal regulators have still yet to secure the national electric grid from another kind of weather—solar weather.

Solar Weather:

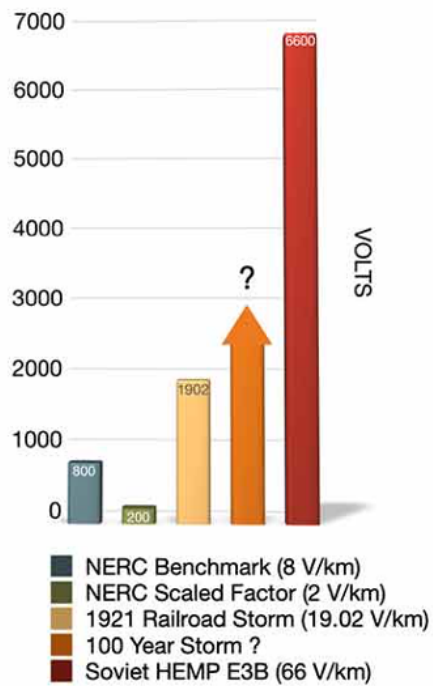
Our nation’s electric grid is extremely vulnerable to disturbances of the electromagnetic spectrum that occur naturally from solar weather (known as a “geomagnetic disturbance”).

In March 1989, a geomagnetic disturbance caused by the sun, later named the “Hydro-Quebec Storm,” blacked out a large portion of Canada and caused catastrophic damage to massive transformers as far

south as Salem, New Jersey. This storm was relatively moderate – the type that strikes earth roughly every 40 years. The 1859 “Carrington Solar Storm” is considered a “100-year” storm, was much more powerful, and would thus cause more catastrophic damage. (We didn’t have an electric grid in 1859).

Since May 2013, the U.S. government agency that regulates the bulk power grid (FERC) has required the electric utility industry to establish and enforce a standard to protect the grid, especially our irreplaceable transformers, against a 100-year solar storm. [National security experts](#), engineers, and solar weather scientists have [warned for 9 years](#) that the standard set by utilities is insufficient, a reality recently confirmed in a [peer-reviewed study](#) by world-renowned scientists.

The reason why this standard is insufficient is intellectual dishonesty. FERC mandated that NERC set what they called a “Benchmark Geomagnetic Disturbance Event.” This benchmark was to establish



*This bar graph was included in testimony to the SEAB and depicts the current level of protection of the grid in Virginia (green) versus known and suspected hazard levels (yellow, orange, and red). *In Texas, the scaled factor requires protection at .8-1.6 V/km which is essentially no protection at all.*

the maximum 1-in-100-year storm that electric utilities must protect against.

Yet when the NERC Standard Drafting Team developed the benchmark event, they did not use data on storms impacting North America – but rather used European data on magnetic fields during a 21-year period during which no major storms occurred. Nor did they collect data on past storm effects on critical grid equipment such as high voltage transformers.

On June 13, 2022, [verbal and written testimony](#) to the Secretary of Energy Advisory Board (SEAB) revealed the startling low level of protection required by the standard, which won't be enforced until 2028. The testimony pointed to a case study in the Virginia / Washington D.C. area and a bar graph that depicts the current standard (in green) versus the types of harmful Ground Induced Currents (GICs) produced

in the 1921 Railroad Storm (in yellow) and even those produced by Soviet nuclear tests, since nuclear EMP causes a similar and even stronger hazard to the grid (in red).

Thus far, neither the Secretary of Energy, nor FERC, nor any other agency of the federal government have taken action to fix this problem despite the availability of tested solutions and a nationwide cost of just over \$4 billion (1/3 of one percent of the Biden Administration's "Bipartisan Infrastructure Bill.")

Given that the transparently defective solar storm standard doesn't get enforced for another four years from now, we can't expect even an insufficient standard to be enforced by the federal government.

Principles of Analysis (For EMP or GMD)

- Use the best available science—Use physics and engineering constraints in analysis to avoid overestimation of risk
- Incorporate the engineered nature of the infrastructures systems—Impacts may already be mitigated by existing control systems, redundancy, backup, hardening, and restoration plans.
- Variable level of analysis sophistication—Each infrastructure has its own level of modeling/simulation maturity → Leverage what is currently available while prioritizing and funding R&D needs
- EMP is one of many threats—Develop best estimate of risk from EMP and GMD to place them in context of other infrastructure threats



5

Nuclear EMP:

July 2024 will mark 20 years since the threat of the Electromagnetic Pulse (EMP) produced by nuclear weapons was declassified by the [Congressional EMP Commission](#). Because of its national security implications, the federal government has extensive knowledge about the threat posed by EMP, and yet two full decades of federal inaction to defend the grid against this threat. Instead, regulators have colluded with industry to misinform the debate, just as they did with Solar weather.

A three-year joint study by the non-profit (industry funded) Electric Power Research Institute (EPRI) and the Department of Energy (DOE) culminated in an April 2019 report titled “High-Altitude Electromagnetic Pulse and the Bulk Power System: Potential Impacts and Mitigation Strategies.” A month prior, in March 2019, NERC created an “[EMP Task Force](#)” to “identify reliability concerns associated with EMPs and potential methods for promoting resilience to this threat.”

The NERC EMP Task Force predictably drew heavily from the industry-funded research on EMP to begin informing any reliability standards. Even DHS’s Cyber Infrastructure Security Agency (CISA) openly displayed slide presentations at a NERC EMP Task Force meeting that admitted they’d purposely sought to “avoid overestimation of risk.”

[The U.S. Air Force Electromagnetic Defense Task Force \(EDTF\)](#) thoroughly analyzed the EPRI report finding that “EPRI’s optimistic assumptions and scenarios obtained from non-DOD sources allowed them to reach conclusions that do not accurately portray risks to the US electric grid.”

One particular section of the [EDTF Report](#) illuminated the level of intellectual dishonesty of the research by revealing a comparison of the EPRI findings and the aforementioned 2003 blackout:

“According to EPRI’s test results, a high-altitude EMP attack would cause relay malfunctions at thousands of points in the grid, simultaneously.

Notably, large-scale grid blackouts have occurred in the past from single-point failures, such as the Northeast Blackout of 2003 which was caused by overgrown trees contacting electric transmission lines. According to the North American Electric Reliability Corporation (NERC) technical analysis of this blackout, it affected more than 70,000 megawatts (MW) of electrical load and left an estimated 50 million people without power. In contrast, EPRI's report concludes that a HEMP attack on the same Eastern Interconnection would cause limited regional voltage collapses and affect roughly 40 percent of the electrical load lost in the 2003 blackout. Experience with cascading collapse in the Eastern Interconnection shows EPRI's finding to be optimistic in the extreme."

Clearly, if NERC's EMP Task Force decides to move forward and draft protection standards based on EPRI's research, those standards will be insufficient.

The USAF EDTF not only published its thorough analysis of the EPRI research, but other very informative reports in [2018](#) and [2019](#) regarding electromagnetic spectrum (EMS) threats to grid infrastructure, particularly nuclear power plants and spent fuel storage facilities – with recommendations that have been mostly ignored by the rest of the federal government but that could be adopted by the state of Texas.

Perhaps the most promising opportunity the USAF EDTF created for the state of Texas was a pilot project in San Antonio Texas. "[San Antonio Electromagnetic Defense](#)" is actively working on hardening not only electric grid infrastructure but other vital critical infrastructures in the vicinity of Joint Base San Antonio – creating a model that can be emulated in cities and counties across the Lone Star State.



This Briefing is: UNCLASSIFIED



San Antonio-Electromagnetic Defense

...Military & Civilian communities working together for EMP Resiliency



Texas Can Lead the Nation



Given the demonstrated challenges to improving electrical grid resilience at the federal level, despite the claims of Rep. Casar and the radical proponents of the Connect the Grid Act, Texas' independent grid is in fact a benefit for improving the state's electrical grid resilience. Texas has the opportunity, and demonstrated ability, to move faster than the rest of the nation in securing it.

Texas' response to Winter Storm Uri provides an excellent example of how the state can achieve major progress in a short period of time when there's political will to do so. In fact, there are experts behind the scenes suggesting to FERC that they should look to Texas' example to strengthen FERC's own standards on weatherization, which is something FERC leadership expressed a desire to do following Texas' 2021 blackout.⁸

In an effort to protect the ERCOT grid from future cold weather-induced blackouts, the Texas legislature directed that the state adopted a stringent

weatherization program for all three parts of the state's grid infrastructure: generation, transmission, and distribution. This effort included six innovative achievements.

6 Things Texas Did Right After Winter Storm Uri

Adoption of a Weatherization Standard

The first part of this program was the adoption of a specific weatherization "standard" that accounts for 95% of the weather scenarios that the state had experienced over the last 100 years. While this standard excluded Winter Storm Uri (because that was 130-year event that brought temperatures not seen since 1890), it established what the industry and the legislature agreed was "an achievable target." The standard was also region-dependent and required facilities to attest whether their design rating would enable them to operate at temperatures within those

“95%” scenarios.

For example, in northern Texas, that would be -17 degrees and in certain areas of southern Texas it might be as high as 20 degrees. Electric generators and other facilities in the state would have to be inspected annually to ensure they could operate at the particular temperatures specified in the standard in their particular regions. Failure to comply would result in fines of \$1,000,000 per day.

This statutorily enforced weatherization standard and an annual inspection requirement forced the owners of these facilities to either prove that their infrastructure was designed to withstand the extreme cold or to take actions to install protections to mitigate the cold.

Reinforcing Fuel Supply Services

Since a major issue during Winter Storm Uri was generator fuel scarcity, the second part of the program focused on reinforcing the fuel supply services for generators by providing financial incentives for generation facilities to install and fill fuel tanks on the premises. This program used the market to set up an emergency service that has attracted enough investment by generators such that the state now has more than three gigawatts of backup fuel in the system to account for fuel scarcity events and/or disruptions to the supply chain. In the wake of malware attacks on infrastructures like the Colonial Pipeline system, this emergency on-site capacity is a wise thing to promote.

[Of note, FERC dismissed [similar efforts](#) by Secure the Grid and former Texas Governor and Energy Secretary Rick Perry to encourage the federal government to promote market incentives (such as “resilience capacity credits”) for on-site fuel storage.]

Enhancing and Prioritizing Emergency Services

The third part of the weatherization program called for enhancement of emergency and ancillary services to be able to deal with both anticipated and unanticipated tripping off of generation sites. The state sought to double the size of those programs and also reinforce communications between the major players that manage the infrastructures and the state’s emergency managers. The state established routine meetings of the Texas Department of Emergency Management (who manages the meetings, the Texas Energy Reliability Committee (which is comprised of major oil and gas producers, pipeline systems,) the Public Utility Commission, the Texas Commission on Environmental Quality, and the Texas Department of Transportation. A goal of these meetings and collaboration is to ensure that enough personnel are staged across the state ahead of the landfall of a major weather event so that the supply chain can be maintained and continue pumping gas to generation facilities as well as the general public. This collaboration also helped the Texas Department of Emergency Management map out every critical point of the energy supply chain in Texas, including critical facilities such as natural gas pipeline compressor stations and other critical fuel processing stations. These critical sites are now known to the grid administrators who now know to prioritize them for electricity when the system is stressed.

Funding of Back-Up Systems

The fourth achievement involved legislature-appropriated funds to be administered through grants by the Texas Department of Emergency Management in concert with the Public Utility Commission to fund backup power capabilities for hospitals, emergency service centers, police stations, and fire stations so that



Tommy Waller (left) and Michael Mabee (second from left) join Texas State Senator Bob Hall (middle) during one of many educational briefings for the Texas legislature.

those can support a regional reliability and resiliency plan to maintain the critical services during a major energy disruption.

Requiring Resiliency Plans

The fifth achievement involved the legislature requiring that the state’s transmission and distribution system utilities submit to the Public Utility Commission resiliency plans which will delineate what they believe they’ll need to invest in to increase the resiliency of their systems. These plans could include procedural and process improvements, technological and equipment improvements such as segmentation technologies and transformer installations, facility improvements such as elevating substations so that they’re not susceptible to flooding, and hardening strategies that they can employ to improve their reliability ratings, and their recovery times.

Establishing a “Virtual Powerplant”

The sixth major achievement was a “first in the nation” effort to launch a virtual power plant program through the aggregated Distributed Energy Resources pilot

program. This would allow people with household backup power systems (such as natural gas generators or a battery system paired with solar panels on their house, etc.) to sell energy into the ERCOT system during emergencies such as during peak scarcity conditions when the grid needs it most. This first of its kind program would ensure that those consumers are paid for the value of that power. The scale of the program is capped currently, but the commission is considering expanding it and opening up more broadly to bring consumers into the effort to support ERCOT system needs on a daily and seasonal basis.

All of these steps put Texas in the lead nationwide with respect to cold weather preparation and these innovations should be replicated in other states since it’s unlikely FERC will move rapidly to adapt these best practices nationwide.

Texas Must Stay Independent and Continue to Lead

It is of course important to note that the political will to mandate grid weatherization did not emerge until after 246 Texans died and the state suffered more than \$100 billion in economic losses from the 2021 blackout. Texas had experienced cold-induced blackouts in 1989 and 2011, yet neither of those events were sufficient to encourage the utilities nor the state government fixed the problems.

As the challenge on the federal level also demonstrates, real progress is only possible once an effective standard is established, inspection procedures put into place, cost recovery mechanisms made available, and financial penalties threatened for non-compliance.

While these weatherization accomplishments are noteworthy and should be commended, Texas, like the rest of the nation, remains vulnerable to the hazards to the grid described above. Unlike the national grid however, Texas has demonstrated a capacity to change.

In 2021 then-Representative Tan Parker sponsored the “[Lone Star Infrastructure Protection Act](#),” which stipulates that “a business entity may not enter into an agreement relating to critical infrastructure” with companies that are owned by foreign adversaries such as China, Russia, Iran, or North Korea nor with companies that “would be granted direct or remote access to or control of critical infrastructures in the state.”

It is unclear, whether the law applies retroactively to Texas utilities who have done business with problematic companies; such as the [Chinese transformer manufacturer](#) who supplied at least one potentially problematic transformer to a Houston-based utility. The state was already home to numerous Chinese-manufactured transformers prior to 2021, some in worrisome proximity to vital other infrastructures. So,

the state must move urgently to rectify this vulnerability. Even so, the Lone Star Infrastructure Protection Act represents real progress in securing the grid and other key infrastructure from supply chain threats.

The Texas grid remains vulnerable to physical attack, cyberattack, and electromagnetic spectrum threats, but educational efforts continue, with the “Secure the Grid Coalition” and its members and partners providing more than 60 hours of educational briefing opportunities to the Texas legislature.

[In 2015](#) and [2018](#), members of the Texas Congressional Delegation wrote to Governor Greg Abbott warning the federal government was not moving fast enough and that Texas should “lead by example by creating workable solutions to protect the electric grid from all hazards.”

The Texas legislature has thus far declined to adopt such “workable solutions” despite legislation, proposed by Texas state Senator Bob Hall, which would require all-hazards protection of the state’s grid. The electric power industry has lobbied heavily against the legislation which has been introduced repeatedly since 2015, arguing that protecting the grid against all hazards is “too costly.”

But if Texas is to have any hope of improving the resilience of its electrical grid, it must maintain its independence from Washington, defeating any initiative to fold ERCOT under FERC and the federal government.

Instead, Texas should consider FERC a cautionary tale, examining the regulator’s failures and committing itself to addressing the threats their national counterparts have ignored. Doing so could put the Lone Star State in a position to still be shining when threats and hazards manifest.

Endnotes

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- 8 Robert Walton, “FERC Chair Glick wants mandatory winterization standards for power plants following Texas grid failure,” *Utility Dive*, September 24, 2021, <https://www.utilitydive.com/news/ferc-chair-glick-wants-mandatory-winterization-standards-for-power-plants/607111/>



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