

Energy officials warn of winter blackout risk in Texas and beyond

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Outside of the Sand Hill natural gas power plant, near Austin, workers have installed a windbreak in case a big winter storm hits again.

The sturdy plastic shrink wrap is stretched tight across scaffolding at the bottom of the plant, designed to stop cold wind from blowing through and freezing the pipes inside.

“We’ve not had one of these walls fail yet,” plant manager Matt Kuffler said.

Behind the wall, the pipes are insulated with “heat tracing,” which is basically high-tech heat blankets that also help prevent freezing.

Kuffler said these precautions kept Sand Hill running through the massive Winter Storm Uri that struck Texas in February 2021.

But a lot of Texas gas plants, some without these safeguards, froze up and stopped working.

That winter grid breakdown left millions of Texans without power for days. State officials said almost 250 people died, though some analysts believe the true death toll [was far higher](#).

Kuffler said after that tragedy, utility officials in other states saw Texas’ energy problems as an outlier, unique to Texas. He remembers out-of-state colleagues expressing their sympathy at conferences in the year that followed.

Then, last winter, another big winter storm — this one called Elliott — pushed power grids to the brink from the Midwest through the Northeast.

“Other utilities outside of Texas had, maybe not quite the same degree of problem, but had an awful lot of problems,” he said. At the next conference he attended “instead of an air of sympathy, it was an air of camaraderie.”

The risk of blackouts this winter is greater than before

The vulnerability of power grids across North America is something the North American Electric Reliability Corporation, or NERC, has been warning about in energy assessments over the last several weeks.

One report, [released on Wednesday](#), highlights the long-term challenges of maintaining grid reliability. Another assessment in November underlines the challenges that big winter storms may pose in the coming months.

In [that November assessment](#), NERC, a nonprofit industry group charged with creating reliability standards, reported that about two-thirds of the U.S. and Canada face the risk of energy shortages this winter if hit by a major storm. And time is running out to reduce that risk.

John Moura, director of reliability assessment for NERC, said the risk of blackouts this winter is greater than he’s ever seen.

“We’re actually seeing that risk expand over wider areas,” Moura said. “More people [are] being affected by the tightening of reserves that we see in the future.”



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Windbreak, a sturdy plastic shrink wrap, has helped keep the cold wind out and keep pipes from freezing at the Sand Hill natural gas power plant outside of Austin.

The reasons for high winter risk this year vary across the country.

In Southern states like Texas, power plants, transmission lines and gas distribution systems are designed to withstand the summer heat, not the winter cold. In the New England states, NERC has flagged limited natural gas pipeline capacity and low liquid fuel inventories as cause for concern.

But the big picture is similar all over: the power grid is changing. It's getting more electricity from natural gas and solar and wind, all sources that don't always perform well in winter storms. Meanwhile, electricity demand is increasing, pulling more energy from often shrinking reserves. When you add in more frequent climate change-fueled winter storms: experts say you have a recipe for power failures.

"We are between a rock and hard place, or a rock and a cold place," said Alison Silverstein, an energy consultant and former official at the Federal Energy Regulatory Commission.

She said winterizing power plants is low-hanging fruit. But long-term improvements like building out electricity transmission and gas pipeline capacity will take a lot more time and money.

That's why, she said, grid managers should focus more on promoting energy efficiency and reducing energy demand.

"This isn't a problem that you can delay any longer," Silverstein said. "The only way to get out of it responsibly, quickly is massive amounts of energy efficiency because we can't build our way out of this fast enough."

Natural gas and electric systems contribute to the energy crunch

Federal regulators and critics are also urging [stronger oversight](#) of the natural gas industry.

"What we've really come to find out is these two systems are now one," NERC's Moura said. "We're reliant on the gas system to be just as reliable as the electric system."

During the last two big winter storms, analysts said poor cold weather reliability standards for gas pipelines, and an under-regulated gas market created insufficient fuel supply to power plants, worsening the energy crunch.

"A really silly example is [you can't buy gas on the weekend](#)," Moura said. "When you have a very big cold spell come out of nowhere, and maybe Monday's a holiday, [you have three days in which you can't buy gas](#) and you can't situate your gas units, because there's no one to call on the weekend."

Back at the Sand Hill gas plant in Kuffler said he's doing what he can to be ready for the next big storm.

“Just because it’s happened within the last couple years, doesn't mean it’s not going to happen again, doesn’t mean it’s not going to be worse,” he said. “And we need to be prepared to handle that.”

But big structural changes to the energy system, from increasing reliability of the gas system to energy market reforms, take time, money and political will.

That’s a challenge, especially in states like Texas, where the energy industry has the political and financial clout to push back against more regulation and oversight.