ANALYSIS

Clean Power Performance During Winter Storm Fern

January 2026

For questions about this analysis and the underlying data, please contact the ACP research team, research@cleanpower.org.

Overview

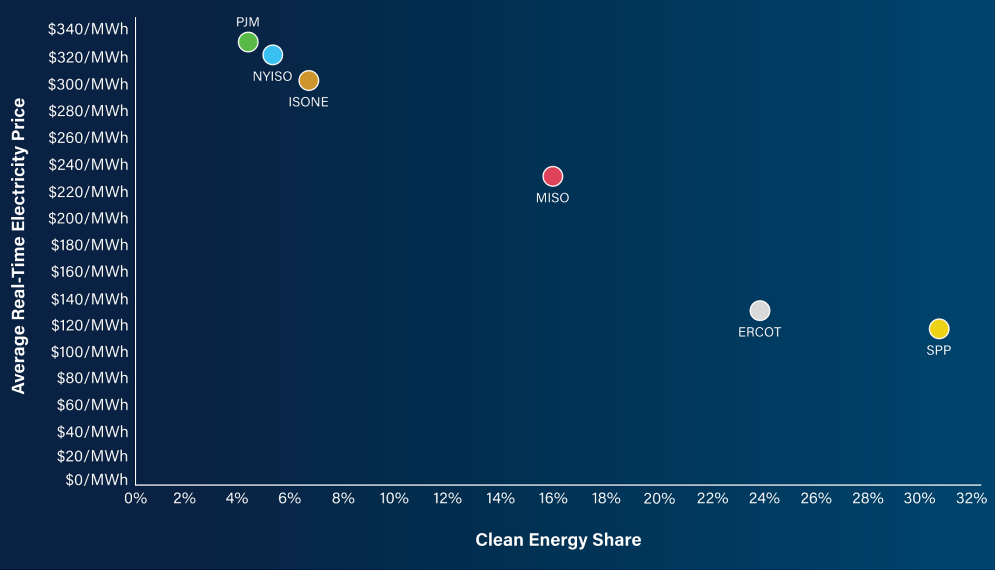
More than two thirds of the country was hit by plummeting temperatures, snow, ice, and wind during Winter Storm Fern from January 23-27, 2026, driving electricity demand to record highs. While most of the Mid-Atlantic and Northeast avoided widespread outages, the storm clearly demonstrated which systems perform best under pressure—those built on a robust mix of energy resources.

Overall, clean energy saved the grid more than $2 billion during Winter Storm Fern. Wholesale electricity markets with significant wind, solar, and energy storage representation saw lower electricity prices than those without.

Even regions with modest clean power deployment saw substantial savings across electricity operating costs:

- In the **PJM Interconnection (PJM),** just a 5% share of wind and solar generation saved their grid $430 million. PJM serves 67 million customers across D.C., Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia.
- **New York and New England (NYISO and ISONE)** each saved over $60 million with about a 6% share of clean energy, serving a combined total of 27 million customers.
- In the **Midcontinent Independent System Operator (MISO),** the Midwest saved over $1 billion with a 16% share of wind and solar energy, serving 45 million customers.
- In the **Electric Reliability Council of Texas (ERCOT),** Texans saved over $200 million with a 24% share of wind, solar, and storage, serving 27 million customers.
- In the **Southwest Power Pool (SPP)**, the Great Plains grid saved roughly $400 million with a 31% share of wind and solar energy, serving 19 million people.

Grids with a higher share of clean energy generation saw lower power prices throughout Winter Storm Fern



Market	Average Real-Time Electricity Price	Clean Energy Share
PJM	$331/MWh	5%
NYISO	$321/MWh	5%
ISONE	$308/MWh	6%
MISO	$230/MWh	16%
ERCOT	$133/MWh	24%
SPP	$118/MWh	31%

Source: ACP analysis of GridStatus data

The Storm

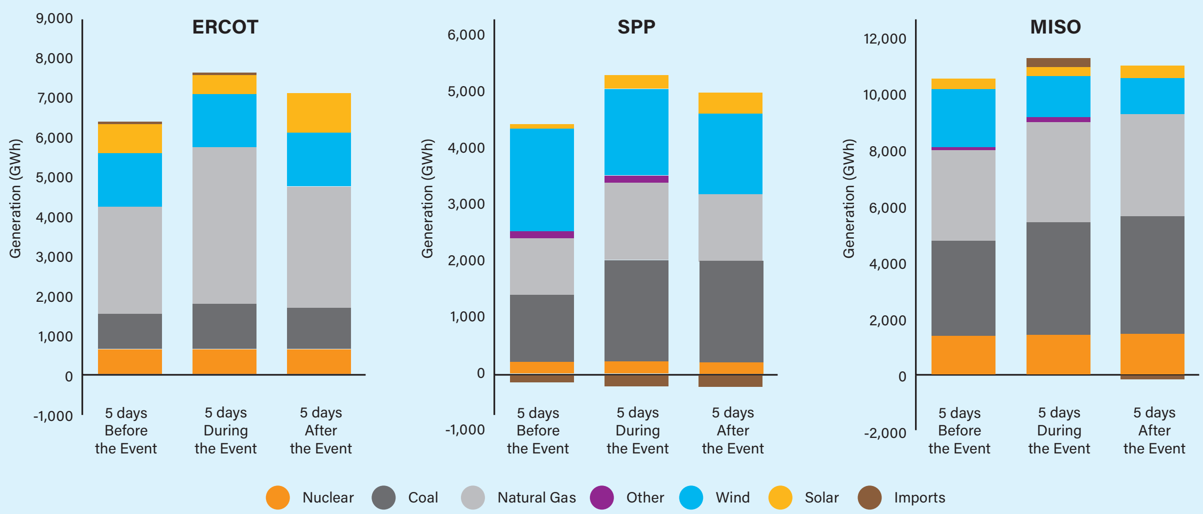
Winter Storm Fern covered two thirds of the U.S. from January 23-27, 2026, followed by another freeze the next week. This storm marked the third consecutive year of severe winter events across the country. Keeping both electrical and natural gas energy systems operational during dangerous extreme cold events is vital to ensuring that critical services can stay online.

Major storms like Fern drive up electricity and natural gas demand for heating, both directly and as fuel for power generation. As supply tightens, more expensive energy sources are used, push grids closer to their reliability limit (i.e. threaten potentials for blackouts), and ultimately increasing wholesale electricity prices. Often "peaker plants" are brought online to meet spiking energy needs – power plants designed to operate only during periods of highest demand, generally at a higher cost. **Regions investing in clean energy saw lower prices compared to regions without such investments because they relied less on bringing in additional, expensive energy sources like peaker plans online to keep up with demand.**

Consistent Power Generation from Clean Energy Resources Kept Prices Lower for Customers

Clean power generation was consistent during Winter Storm Fern with no significant drops relative to the days before or after. Clean power generated over 6,000 GWh during the storm across Texas, Plains, Midwest, and Northeast. **That's equivalent to powering over 43 million homes.**

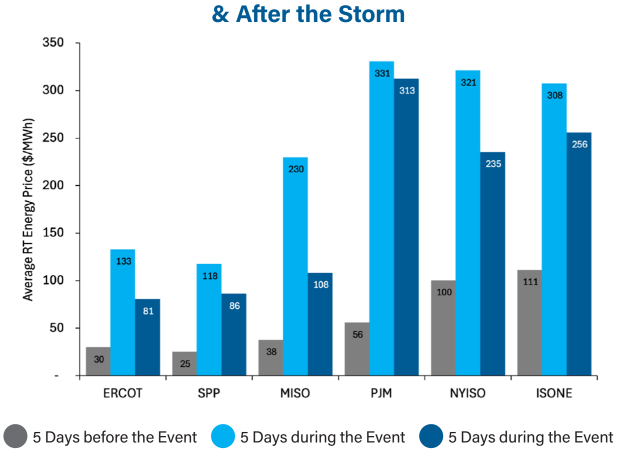
Generation over 5 days increments prior, during, and after Winter Storm Fern (January 23–27)



Regions with high clean power penetration kept electricity prices low during the winter storm. Clean energy supplied over 24% of electricity in SPP and Texas, holding average prices below $135/MWh.

In the Northeast, where clean energy makes up less than 10% of generation, prices rose above $300/MWh due to increased heating needs and spiking natural gas prices. Reliance on more expensive thermal units like natural gas and oil forced prices to extremes.

Average Price of Electricity Before, During, & After the Storm

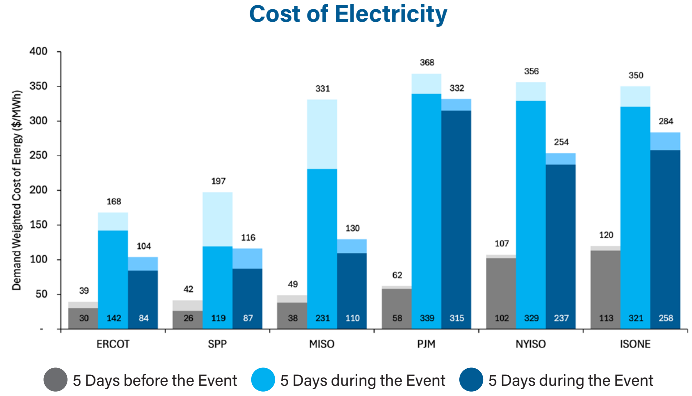


Clean Power Saved the Grid Over $2 Billion During Winter Storm Fern

Without clean power during Winter Storm Fern, U.S. grids would have faced more than $2 billion in extra costs. SPP, MISO, and ERCOT contributed over 75% of these savings, thanks to wind's steady output that reduced reliance on expensive thermal units.

In PJM, where clean power made up less than 5% of generation, clean energy still saved the grid over $400 million by offsetting high gas prices—natural gas reached about $150/MMBtu on January 27.

ACP analyzed the hourly grid dynamics in each ISO to assess clean tech performance. For every real-time hourly generation of clean power, ACP assumed a generic natural gas peaking plant would have taken its place to meet increased load.[1] The extra cost is the additional operating cost of the gas unit relative to the real-time price of that market spread out over hourly electricity demand.[2]



ERCOT and SPP, with the highest shares of clean power, saw lower cost of electricity during the storm. Without clean power, electricity costs would have been $25-100/MWh higher.

Reliability vs. Resource Adequacy

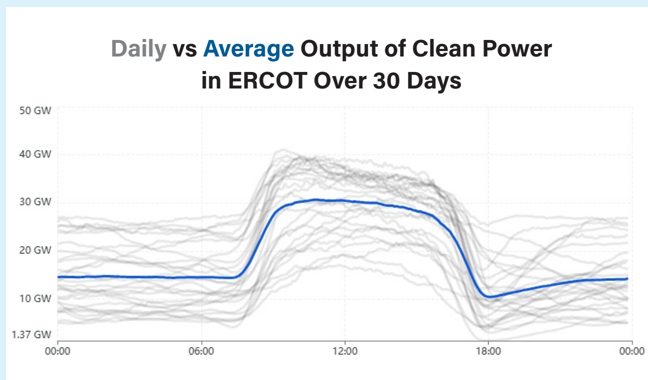
Analogy: Resource adequacy is having enough staff to treat patients, while reliability is a hospital consistently treating patients regardless of conditions.

Reliability means the grid or power plant operates smoothly and continuously – as Americans count on every day.

Resource adequacy is an essential part of reliability—it's about planning enough capacity and generation to meet peak demand, as seen during Winter Storm Fern.

Wind and solar are "variable" resources, but their average generation over time is consistent and predictable. When paired with energy storage, that consistency is even more reliable.

Grid operators use this consistent profile to determine resource adequacy contributions, which evolve as the resource mix and electricity demand change.



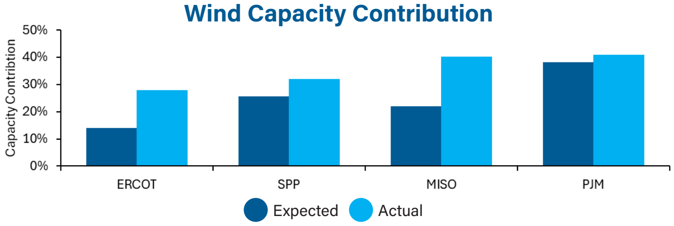
1. 10,000 Btu/kWh gas unit with a $5/MWh variable and operating cost. Fuel costs based on monthly spot prices for indicative hubs.
2. It does not represent a new electricity price, rather the weighted additional operating cost of the grid to have that gas run. It does not include any scarcity price adders from tightening market conditions

Wind Delivered Beyond Expectations During the Storm

Wind provided more power during the storm than the Independent System Operators (ISOs) had planned for, performing above expectations when the grid needed it most.

The graph highlights wind generation during ISOs "most-needed-hour." Most markets consider this time to be peak demand, i.e. when electricity demand is the highest (generally occurs in the early evening). In the case of ERCOT, it is the hour with the highest reserve shortage risk, i.e. when their supply vs demand relationship is tightest (7-8 am).

Wind Capacity Contribution

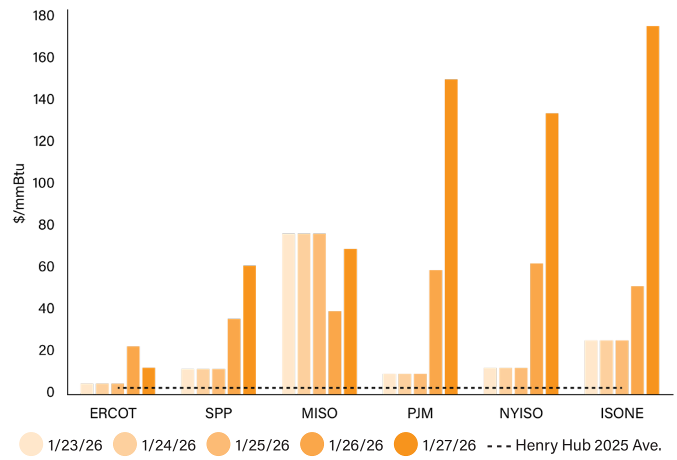


The graph highlights wind generation during the peak hour over the 5 days of the storm relative to their total capability. ERCOT's is during 7-8am (hour with their highest reserve shortage risk).

Gas Prices Spiked in Reaction to the Storm

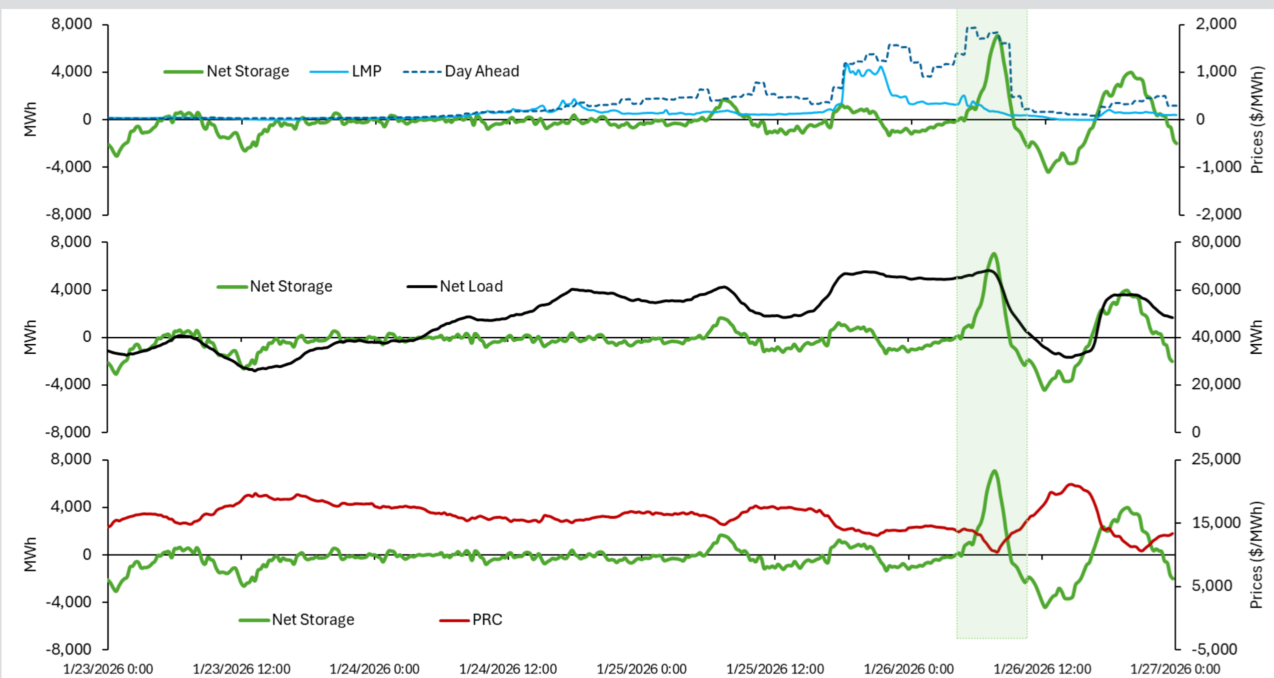
All major gas hubs saw significant bumps in their physical gas price within 24 hours of Fern setting in as demand for natural gas across the economy surged.

Gas Hub Spot Prices during Winter Storm Fern



CASE STUDY:

Batteries in ERCOT Kept Reserves High and Electricity Prices Low



Storage largely remained charged through Winter Storm Fern, allowing reserves to stay about 10,000 MWh throughout the storm. Batteries discharged when needed most, keeping real-time energy prices low. Day-ahead price was over $1800/MWh but storage deploys at peak net load, so real-time price was 1/10th of that. Storage accounted for 10% of peak net load on January 26th.

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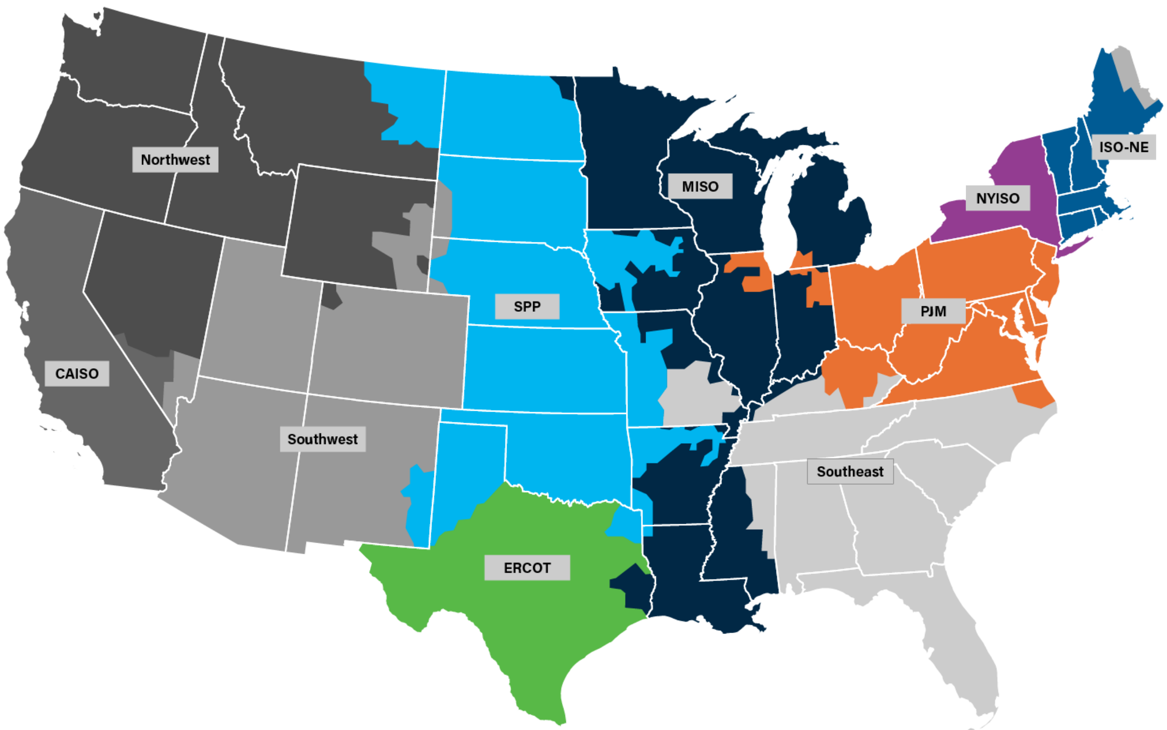
Breakdown by Regional Transmission Organization



ERCOT

Clean power supplied 24% of demand, saving $170M in operating costs. Without it, ERCOT would have faced reliability risks and higher prices.

SPP

Wind met over 31% of demand, saving $380M. SPP was a net exporter, sending power to MISO.

MISO

Clean power generated similar levels as SPP and ERCOT, but higher regular natural gas prices in the grid mix meant over $1B in savings. MISO relied heavily on imports from PJM and SPP.

PJM

Clean power made up just 5% of demand but saved $429M due to high gas prices. 10% of thermal plants were offline.

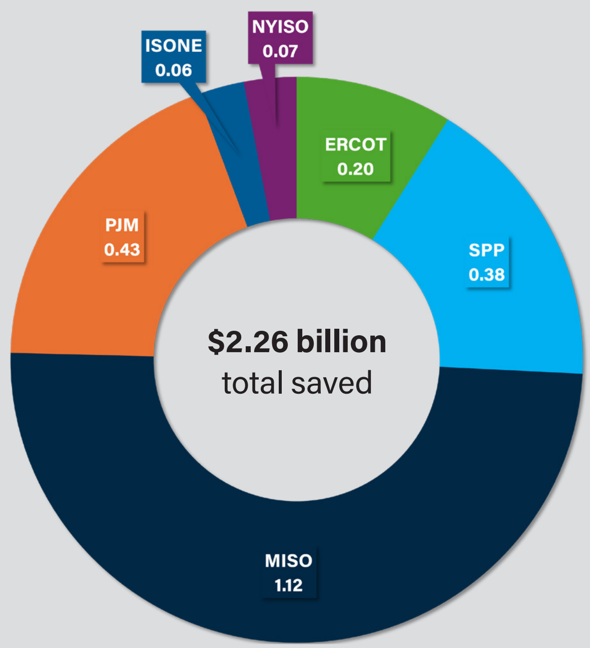
NYISO

Limited clean power saved $65M. NYISO used more imports and dual fuel units to meet demand.

ISO-NE

Clean power saved $60M. The region switched to oil as natural gas prices soared.

Operating Cost without Clean Power by ISO ($bn)



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The American Clean Power Association (ACP) is the leading voice of today's multi-tech clean energy industry, representing energy storage, wind, utility-scale solar, clean hydrogen, and transmission companies. ACP is committed to meeting America's energy and national security goals and building our economy with fast-growing, low-cost, and reliable domestic power.

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