Wind and solar are reliable in extreme weather, despite what the critics say

John Hensley, American Clean Power Association, Guest Contributor • Feb. 16, 2024

While weather-related blackouts grab the headlines, what's less noticed is how wind and solar are increasingly providing reliable power day in and day out, across the country.

Three years after a historic winter storm knocked out power in Texas that tragically killed 246 people, the blame game is still going on. Those who are ideologically opposed to clean energy continue to blame wind and solar for power failures, no matter how many times the facts have debunked this misinformation.

And it doesn't stop with Texas. Despite evidence to the contrary, special interests view any power outage during a storm as an opportunity to point the finger at renewable energy.

As a lead analyst for the renewable energy industry, I closely monitor the growth of this industry and how it contributes month by month, day by day and hour by hour to our nation's energy mix.

The truth is that extreme cold weather, particularly in areas like Texas that have power systems not designed to withstand harsh winter conditions, is detrimental to most sources of power.

Texas' primary source of electricity comes from natural gas, which experienced the most significant drop in production during Winter Storm Uri in 2021. This was due, in part, to scheduled maintenance ? 14 gigawatts of gas and coal-fired generation were offline as the storm approached ? and the inability to source fuel as production slowed and delivery to homes for heating was prioritized.

Fossil fuel power plant outages more than doubled as the weather intensified. The energy research firm Wood Mackenzie was clear in its assessment: "Freezing rain and cold temperatures decimated coal, natural gas, and nuclear power plants alike, with emergency equipment failures, broken sensors, frozen coal piles and more issues."

Wind power exceeded expectations during winter storm

All in all, Wood Mackenzie and others cited that nearly half of Texas' grid generation from gas and coal sources went down because of weather, poor procedures, lack of infrastructure weatherization and the inability to get fuel. And while some wind turbines did freeze, wind power exceeded the grid operator's expectation for power generation, aided in part by strong winds and warmer conditions along the Gulf Coast.

In the wake of Winter Storm Elliott in 2022, which battered the Midwest and the Northeast, the Federal Energy Regulatory Commission and the North American Electric Reliability Corp. found that gas, coal and oil-generated power accounted for 90% of the prolonged power outages experienced throughout the storm.

Again, opponents of clean power pointed at renewable energy while ignoring that one natural gas plant was down for maintenance and several others had either gone down partially or entirely due to the cold.

During Winter Storm Heather last month, Texas experienced record high peak demand for electricity and maintained power thanks to a weatherized grid that included 25% more wind and three times more storage and solar than was online during Uri. Grid operators in the Midwest and Northeast reported wind and solar operating above expectations, especially when the grid was most strained.

While weather-related blackouts grab the headlines, what's less noticed is how wind and solar are increasingly providing reliable power day in and day out, across the country. More than 15% of America's power now comes from wind and solar farms, providing an extremely valuable power source that's helping the grid keep up with increasing demand.

Further, studies clearly demonstrate that the U.S. grid can operate reliably with high levels of renewable energy.

Battery storage helps supply power when its needed

While all sources of energy have vulnerabilities, renewable energy is increasingly buttressed by a technology that's growing rapidly: battery storage. Battery storage systems store the power from renewable sources and deliver it to the grid when needed.

Increasingly, large utility-scale wind and solar projects are coupled with battery storage.

Especially in recent summers when demand typically increases due to air conditioning, battery storage is providing enhanced reliability and stability for our grid systems during critical moments such as historic heat waves in California and Texas.

Of course, the irony of scapegoating wind and solar development during extreme weather outages is that this is precisely the type of clean power we need to reduce the effects of climate change. Rather than exploiting weather-related blackouts to drive an agenda, the private and public sectors need to be laser-focused on working together to make sure we have a more resilient power system.

Outages that lead to widespread suffering could very well become the norm unless we get serious about solutions. The first step needs to be a clear-eyed and truthful assessment of the facts.

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