



NATURAL GAS OUTAGES CAUSED MORE ISSUES THAN WIND DURING ERCOT'S BLACKOUTS

Grid software firm confirms that natural gas outages in the recent ERCOT energy crisis caused more issues than wind, but wind could have done more

Boulder, CO, March 23rd, 2021 – [Vibrant Clean Energy, LLC](#) (a grid software firm) released today a self-funded [white paper](#) on Winter Storm Uri and its impacts on the [ERCOT](#) electricity grid. The white paper confirms that natural gas had the highest outage rate of all generation types; in excess of 25,000 MW at peak for several days. Despite recent reports that wind was a cause of issues, the VCE® report counters this. Rather, showing that wind actually over performed compared with expectations. There were a few time periods where wind underperformed, but that only lasted a few hours at a time.

The white paper indicates that with much better winterization the wind generation in ERCOT could have been substantially more. This could have created over \$5 billion in revenue for wind generators and reduced the blackout total MW shed and duration for many customers.

The white paper goes on to show that high-voltage direct current (HVDC) connections to MISO and SPP could have provided between 500 and 650 GWh of additional wind generation across the blackout period. Simultaneously, the HVDC lines could have provided support to MISO and SPP earlier in the winter storm. These transmission lines would cost approximately \$2.4 billion to construct and would allow ERCOT to combine forces with two large grids that could help diversify its portfolio.

Dr Chris Clack, CEO of Vibrant Clean Energy, LLC, says that “the ERCOT crisis was weather induced, but with more planning for extreme events, something that will become more frequent in the future, the grid could have performed much better and interconnecting with other regions makes sense for numerous regions, not least the diversification of resources and demands.” He added that “winterization of wind, and other technologies, should become commonplace because the cost of doing so is almost always cheaper than the consequence of not.”

Finally, the white paper studied a hypothetical future high renewable ERCOT grid. It shows that the variability of wind and solar would still persist in the future, but the modeling added 40,000 MW of storage to the grid at the same time. That storage would have covered all of the blackout requirements with room to spare. Interconnections to other regions were also developed in the future scenario. These also assist with balancing the system across a wide range of extreme weather phenomena.

The white paper relied on publicly available data as much as possible. It also used the VCE created weather datasets to study the possibilities for interconnection, winterization and how deep the winter storm intruded on the ERCOT grid. VCE are releasing the [data](#) used in the report to aid transparency and further study by others.

Clack added “there is much more to study from the ERCOT energy crisis from this winter storm, and VCE is proud to contribute to the understanding of what happened. We hope that we can study this event more as well as possible future possible events with collaborators to prevent such issues occurring again.”

About Vibrant Clean Energy: A nationally recognized energy grid modeling firm based in Boulder, Colorado. VCE® creates computer optimization software to study pathways for energy systems futures. It also performs studies using WIS:dom® to provide expertise in new arenas of electrification, decarbonization and variable resources. The mission of VCE is to help facilitate universal, sustainable, and cheap energy for everyone. www.VibrantCleanEnergy.com

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