

March 11, 2021

The Honorable John Hoeven
United States Senator
338 Russell Building
Washington DC 20510

Dear Senator Hoeven:

In response to your request to provide perspective to the committee on the role of baseload generation during times of high energy demand, based on my experience responding to requests for emergency relief to maintain the reliability of the system, I offer the following observations:

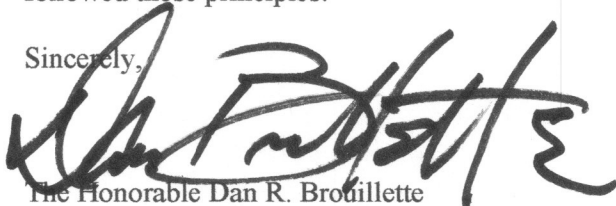
- 1) Studies have shown consistently that when our electricity system is stressed during hot days in summer or cold days in winter—when your constituents need it the most—it is baseload generation that is relied upon to provide dispatchable, predictable power. The Department of Energy’s government-owned and government-operated National Energy Technology Lab (NETL) conducted an exhaustive study following the Polar Vortex in 2014 and the “bomb cyclone” of 2018, and found that in each instance, the generation used most reliably to meet the increase in demand due to those weather conditions was produced by nuclear, coal, oil and natural gas. These reports illustrate the importance of maintaining generation from sources currently scheduled for (or are at the risk of) closure and the need to construct and operate sufficient gas pipelines to ensure access to and delivery of natural gas. [Additional Pipeline Capacity and Baseload Power Generation Needed to Secure Electric Grid | netl.doe.gov](https://www.netl.doe.gov/publications/Additional-Pipeline-Capacity-and-Baseload-Power-Generation-Needed-to-Secure-Electric-Grid)
- 2) The debate in Texas concerning which generation source performed poorly really misses the point. Wind and solar are important sources of supply but are intermittent and operate at lower capacity rates than nuclear, coal or natural gas generation. Even before the freeze occurred in Texas, ERCOT was expecting only a fraction of the wind capacity to be available. By contrast, baseload generation is always available.
- 3) Two decades ago, FERC initiated what can best be described as an experiment with electricity markets. As we sit here in 2021, the jury is still out on the results. Recent reports reveal customers have not achieved the cost savings they were promised. In fact, customers may have been paying more than if utilities had remained integrated and cost regulated. [Deregulation Aimed to Lower Home-Power Bills. For Many, It Didn’t. - WSJ](https://www.wsj.com/articles/deregulation-aimed-to-lower-home-power-bills-for-many-it-didnt-11588888888). Many are also uncertain about FERC’s experiment because, like President Jimmy Carter, governments and grid managers still ask Americans to adjust thermostats to avoid blackouts, to wear sweaters to avoid brownouts, to purchase “energy efficient” appliances that cannot efficiently perform the very functions for which they are designed, to reduce their use of electricity so the grid doesn’t collapse...in other words, to simply “do without.” A review of NOAA data shows that the weather is not the root cause of brownouts and blackouts in America; it’s the lack of baseload generation capacity that is creating a shortage of on-demand or “dispatchable” electricity production.
- 4) We now know, however, that these “bid-based” markets fail to recognize the value of baseload electricity generation. They have a variety of mechanisms that are assumed to incent the power industry to have sufficient capacity available during times of need. But whether it’s PJM or New England ISO with capacity markets, or the California ISO and MISO with ready “must-run” units, or ERCOT with its energy-only market, each have shown they are imperfect designs resulting in orders to shed load, reduce demand or face blackouts, almost always with tragic results. To ensure power is available to all when it is needed most, these “markets” should be designed to adequately price

reliability and resiliency in addition to capacity and the cost of energy. Currently, the reliability and resiliency of generation sources is not appropriately factored into electricity prices.

- 5) It is also important to recognize that stress on the system is not always caused by peak loads. Last summer, when I issued an emergency order in California, demand was *not* at a record level. Several natural gas units were readily available, but absent my emergency order, emission rules limited their ability to produce electricity. Additionally, the state's environmental policies prematurely closed other baseload units, resulting in an overall generation deficit. It is becoming more and more apparent that decisions to close plants are creating generation deficiencies and imbalance: the power simply might not be available when consumers need it.
- 6) Interconnecting ERCOT with the East and West Interconnect is not likely the answer. Many have said that the Texas blackouts could have been avoided if its grid were not isolated from the rest of the nation's bulk power system. These arguments suggest that being more fully interconnected with the West and East regions could have allowed generation from the surrounding region to flow into Texas. However, other regions were likely experiencing similar demands on their systems and it's not clear that any additional power would have been readily available. Furthermore, ERCOT's independence may have prevented its blackouts from spreading throughout other regions, as experienced in the 2003 blackouts.
- 7) A weather event should not be the cause of regional blackouts or statewide brownouts. In recent years, high performance computing and artificial intelligence analytics have improved modeling for both industry planners and investors. The technology used on the grid has greatly improved since the blackouts of 18 years ago. Load demands are becoming more and more predictable, and an imbalance of demand and supply of electricity is avoidable if the value of baseload generation is appropriately recognized and utilized.

Leadership comes with responsibility—responsibility to make hard decisions to avoid disastrous results based on sound engineering principles and the laws of physics. The problems faced by ERCOT last month and California last summer could have been avoided if their decisions had followed those principles.

Sincerely,



The Honorable Dan R. Brouillette