

## Grid reliability before and during Abbott's tenure

In February 2011 Texas experienced an ice storm and freezing conditions similar to February 2021. Rolling blackouts resulted but the power outages were minor compared to those we experienced last year.

In April 2013 I became Commissioner Kenneth W. Anderson, Jr's Policy Advisor at the Public Utility Commission of Texas. My top priority was to examine the failures of February 2011 and determine if the energy only market construct created by the legislature in 1999 would produce a reliable electric grid for the public. I determined that the cause of the ERCOT rolling blackouts in 2011 was because of poor operational reliability (poor winterization, poor operations practices, etc.) of our thermal generation power plants, not because of a shortage of the amount of thermal generation in ERCOT. Basically about 50% of our thermal generation was not available because of poor operational (including maintenance) practices. This caused a shortage and blackouts resulted.

In January 2014 the Polar Vortex hit, and Texas experienced no rolling blackouts even though the winter storm was just as severe as 2011. My after-event analysis of the grid's performance identified the same problems that caused the rolling blackouts in 2011. While our operational reliability had improved, it was still poor. Our operational reliability had improved to 62% to 64% for thermal generating units, and that was just enough to prevent rolling blackouts. I then developed the concept of the "Reliability Triad" which emphasized operational reliability. This was embraced by Commissioner Anderson and he then championed the message that improving operational reliability was the key to keeping the lights on in ERCOT.

In the Fall of 2014 the EPA's proposed Clean Power Plan came out, and I was tasked with evaluating its impact on Texas, from both an electric grid reliability and an oil and gas perspective. The analysis determined several things: First, existing EPA regulations, not having anything to do with the Clean Power Plan, would cause most of the coal fired generation in Texas to shut down over the next seven years. This is because at about the 35-year mark, coal fired generation requires an extensive overhaul to extend the life of key equipment to a life expectancy of the plant to 55 years. The cost of the overhaul would be about \$500,000 per MW. Investing \$500,000 per MW into a 35-year-old coal plant that

operates at 37% efficiency makes no sense when you can build a new natural gas combined cycle plant for \$800,000 per MW that operates at 61% efficiency.

Second, that Texas would meet the proposed EPA requirements, but to do so we must develop natural gas combined cycle plants in conjunction with the intermittent generation (wind and solar) that was being built in Texas. It was emphasized that NGCC generation must be constructed because grid reliability starts to become an issue when we surpass 17% electrical generation from renewable resources.

Finally, Texas is an oil and gas state. The coal our coal fired plants purchased came from the Powder River Basin in Wyoming. Natural gas consumed would come right from the Texas oil and gas industry. Our oil and gas industry was getting crushed at the time in a serious downturn, building plants that consumed natural gas would be good for the Texas oil and gas industry.

In March of 2015 my analysis was provided directly to Abbott, who had just assumed office, in both written and spoken form, in a meeting that included two of his future selections as Commissioners to the Public Utility Commission as well as Abbott's chief of staff. I know, because I was in the meeting presenting the work along with my boss Ken Anderson.

The outcome of that meeting? The analysis was rejected, ignored, dismissed, and Ken Anderson was told to fire me, which he thankfully refused to do.

Since January 2015, the beginning of Abbott's first term, the ERCOT grid has lost over 3,000 MW of thermal generation while adding over 17,000 MW of intermittent generation. The grid has reached a dangerous imbalance due to neglect by Abbott. In the ice storms of 2011 and 2014, we still had enough thermal generation to prevent rolling blackouts. To maintain grid reliability in 2021 we needed to start building thermal generation in 2015 at a ratio of 830 MW of NGCC for every 170 MW of wind and solar (while improving operational reliability). Instead, we lost 3,000 MW of thermal generation while adding 17,000 MW of wind and solar and completely neglecting operational reliability. Abbott was willing to put the interests of coal fired generation first (and the coal fired plants were still closed as predicted in my analysis) before the reliability of the Texas grid while neglecting operational reliability, and before the interests of the Texas oil and gas industry. The first led directly to the failure of the ERCOT grid in

February 2021, billions in losses, hundreds of deaths and a general lack of trust in the ERCOT grid that will have far reaching federal implications as well as make businesses question their decision to locate to Texas. The betrayal of the Texas oil and gas industry in favor of coal from Wyoming? Well, that's just downright un-Texan.

Abbott has flown the ERCOT aircraft with all Texans aboard, directly into a cliff in just over 6 years. If you're a Texan you're stuck on the plane, the only way you can get off is to move to another state. Abbott wants to blindly stumble into the cockpit and grab the controls for another 4 years. You may not be able to leave the plane, but you do get to choose the pilot. The only way you can choose is if you get off your butt, register to vote, and then vote. You must do that, otherwise, you'll end up splattered on a cliff, again.