

The Catastrophic Texas Blackouts: Lessons For The Developing Countries

BY DR. TILAK K. DOSHI

The recent severe snowstorm in the US led to a catastrophic power outage in Texas leaving millions of people without access to power or heat for several days, with a mounting death toll that has yet to be fully tallied.¹ The state was about 4 minutes and seconds away from a total grid collapse² that would have left the state's residents for weeks or months without power. If that were to have happened, tens of thousands of people would have been at the risk of freezing to death.

Political leaders in Asia, Africa and Latin America, well aware that reliable and affordable electricity for their burgeoning middle classes is a pre-requisite of staying in office, would no doubt incredulously ask "How could this happen in Texas, the energy power-house of the US, the country which surpassed Russia in 2011 to become the world's largest producer of natural gas and overtook Saudi Arabia in 2018 to become the world's largest producer of oil?"³

Energy planners and grid engineers in many developing countries work with creaky grid infrastructure and frequent breakdowns lead many of their customers to own diesel gen-sets as ready backups. The irony will not be lost: last week, President Biden ordered the federal government to provide diesel generators and diesel fuel along with other assistance to Texas amid the power outages brought on by extreme cold.⁴

Policy Lessons Of The Texas Debacle

For energy policy makers around the world, the lessons of the Texas debacle will be a warning sign in their own planning for power grid reliability and resilience to adverse events. Thus, UK's *The Telegraph* ran a headline: "Blackouts in energy-rich Texas are a wake-up call for knife-edge Britain".⁵ However, gleaning policy lessons will not be straight-forward.

Like most controversies in America these days, the failures of the Texas power grid when it was most needed led to a blizzard of blame and finger-pointing largely along partisan lines. A torrent of information, analysis and "fact checks" has occupied the media and its talking heads as the extent of the grid failure became apparent.

For those convinced of an impending climate Armageddon (usually one or two decades away) such as Congresswoman Alexandria Ocasio-Cortez, a simple tweet says it all: "The infrastructure failures in Texas are quite literally what happens when you *don't* pursue a Green New Deal."⁶ Fellow travellers on the "climate crisis" bandwagon deny that the icing-up of wind turbines -- captured in a classic meme of an oil-fuelled helicopter spraying oil-derived anti-freeze on turbines made with oil-based products -- played a role

in the grid failure.⁷ They accuse "fossil fuel interests and their allies in the Republican Party" of hiding the "real culprit": natural gas and power grid "poorly prepared to deal with severe winter conditions after years of deregulation".⁸

In the polarized world of American politics, the 'other side' is personified by the likes of the Texas Public Policy Foundation, described by Wikipedia – the "go-to fact-checker" for many – as "a conservative think tank with ties to the fossil fuel industry".⁹ TPPF alleges that the storm "never would have been an issue had our grid not been so deeply penetrated by renewable energy sources."¹⁰

Who Is Right?

Is the TPPF view right? This is a hugely important question. The lives and basic comfort of many people are at stake. The fate of many a planner or politician around the world depends quite literally on getting on the right side of the debate over the Texas debacle. For developing countries, the stakes are far higher as the lower per capita incomes of their constituents carry risks that few in the rich world can appreciate.

One might think that the truth of the Texas blackouts is far more prosaic. It was simply the extreme weather. The fact is that all energy sources – coal, natural gas and nuclear as well as wind -- were not "winterized" due to short sighted, profit-focused planning in a deregulated market, as the *Texas Tribune* would have it.¹¹

Alas if that were but true. For those whose professional work is in the engineering, economics and public policy aspects of power grids, the Texas debacle has been decades in the making. To begin with, fossil-fuelled power plants are designed for cold weather and rarely freeze. Fossil-fuelled power plants run in severe cold weather conditions around the world, from the Arctic steppes of Siberia to the northern reaches of China and India, not to mention the frigid plains of Canada.

Decades of policy preferences in Texas in favour of weather-dependent, intermittent "renewable energy" – read solar and wind – added 20 GW of capacity since 2015 while retiring coal power plants and barely adding to natural gas capacity.¹² More than \$80 billion in Federal subsidies were spent on wind and solar during 2010 – 2019; an additional average of \$1.5 billion is spent annually on state subsidies for renewable energy. A deregulated market that rewards power generation without requiring reliable capacity ready to supply power as needed naturally tilted the field in favour of intermittent solar and wind power.

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The standard response of the renewables lobby is that fossil fuels receive subsidies too. The fact that wind receives 17 times, and solar an astonishing 75 times, the fiscal support that fossil-fuelled power generation receives on a per kilowatt-hour basis¹³ is lost in the rage of the culture wars between the renewable energy advocates and their counterparts on the side of oil, gas and coal.

Texas thus opted to lose reliable generation capacity while counting on solar and wind to keep up with power demand. To any engineer worthy of his degree, the increasing likelihood that an event that combined very high demand with intermittent wind and solar power output would lead to blackouts would be apparent. As one observer, a former Republican member of the Texas House of Representatives puts it, “the only surprise was that such a situation occurred during a rare winter freeze and not during the predictable Texas summer heat waves”.¹⁴ The knife-edge fragility of power grids in Western Europe¹⁵ and the UK¹⁶ which have imposed policies that forced rapid growth in renewable energy capacity is no surprise.

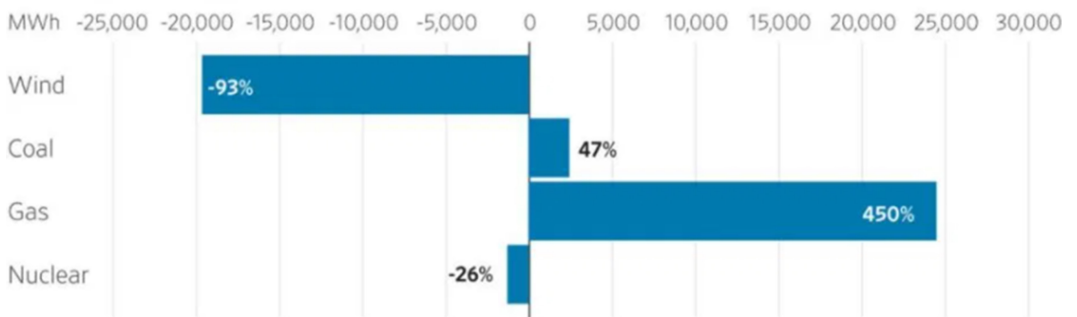
Perhaps the most straightforward view of what transpired is given by the chart below. It shows the change in power output by fuel in Texas between January 18th and February 17th. Not only did coal and gas power hold up better than wind, which fell by over 90%, but gas turbine generators increased output by a massive 450%, nearly making up for the shortfall in wind. But this proved to be not enough to cover surging power demand brought on by the Arctic blast. It takes chutzpah to assert that because gas, coal and nuclear power did not operate at 100% of expected potential, they “failed” even though wind failed by nearly 100%.¹⁷

A Most Consequential Irony

For planners and politicians of the developing countries, most of which are signatories to the (non-binding) Paris Agreement, hectoring constantly about the need to “transition” from fossil fuels, the Texas debacle provides ironic education beyond just the rushed dependence on diesel generators when the chips are down in one of the world’s richest countries.

Perhaps the most profound irony, and the most consequential, should be saved for last. Among the first actions by Joe Biden, the first US “climate president”,¹⁸ was to re-join the Paris Agreement. His international climate czar John Kerry met with UN Secretary-General Antonio Guterres to mark America’s re-entry barely days after the worst of the Texas tragedy.

Change in Power Output Jan. 18, 2021 – Feb. 17, 2021, 12 a.m.



Source: U.S. Energy Information Administration

Convinced that the Earth has 9 years to avert the worst consequences of the “climate crisis” and “there’s no faking it on this one”,¹⁹ Mr. Kerry called on the world’s big emitting countries, including China, India, and Russia to “really step up”, cut fossil fuel use and “raise their ambition” to “fight against climate change”.²⁰ The irony however is lost on Mr. Kerry. He goes around lecturing poorer countries on the need for raised ambitions to fight climate change when it is those very same ambitions that led to the tragic debacle in Texas.

Footnotes

- ¹ <https://www.wsj.com/articles/full-death-toll-from-texas-storm-could-take-months-to-determine-11614107708>
- ² <https://nypost.com/2021/02/25/texas-power-grid-was-minutes-away-from-total-collapse/>
- ³ <https://www.eia.gov/todayinenergy/detail.php?id=40973>
- ⁴ <https://www.fema.gov/press-release/20210222/fema-responds-severe-winter-weather>
- ⁵ <https://www.telegraph.co.uk/news/2021/02/19/blackouts-energy-rich-texas-wake-up-call-knife-edge-britain/>
- ⁶ <https://www.foxnews.com/politics/aoc-says-green-new-deal-would-have-helped-prevent-texas-blackouts-during-winter-storm>
- ⁷ <https://data.ibtimes.sg/en/full/46929/wind-turbine.png>
- ⁸ <https://www.washingtonpost.com/politics/2021/02/18/frozen-windmills-arent-blame-texas-power-failure-neither-is-green-new-deal/>
- ⁹ https://en.wikipedia.org/wiki/Texas_Public_Policy_Foundation
- ¹⁰ <https://www.npr.org/sections/live-updates-winter-storms-2021>
- ¹¹ <https://www.texastribune.org/2021/02/17/texas-power-grid-failures/>
- ¹² <https://gov.texas.gov/uploads/files/business/renewableenergy-report.pdf>
- ¹³ <https://lifepowered.org/wp-content/uploads/2020/07/2020-04-RR-Bennett-LP-Federal-Energy-Subsidies-2.pdf>
- ¹⁴ <https://thefederalist.com/2021/02/18/texas-blackouts-are-the-result-of-unreliable-green-energy/>
- ¹⁵ <https://www.thegwpf.com/8-january-2021-europe-just-skirted-blackout-disaster/>
- ¹⁶ <https://www.thegwpf.com/blackouts-in-energy-rich-texas-are-a-wake-up-call-for-knife-edge-britain/>
- ¹⁷ <https://www.wsj.com/articles/texas-spins-into-the-wind-11613605698>
- ¹⁸ <https://www.nature.com/articles/d41586-020-03250-z>
- ¹⁹ <https://www.cbsnews.com/news/climate-change-9-years-john-kerry/>
- ²⁰ <https://www.tribuneindia.com/news/world/china-india-russia-must-lower-emissions-john-kerry-215515>