Fact Sheet – the recent electric power grid crisis

A high-level summary as of February 26, 2021

From February 12th through approximately February 19th, the entire Southwest Power Pool (SPP – that covers all or much of 14 states in the interior of the country), suffered extreme and dangerously cold temperatures. Consequently, retail electric utilities (and also retail gas utilities) have already begun to formulate preliminary plans for economic recovery and the continuation of service deliveries.

It cannot be overstated that precise economic cost figures are not yet known. This is true throughout the entire SPP region because of the complex matrices associated with cost settlements, and subsequent billings, which will occur throughout the entire SPP footprint.

However, there is currently much that *is* known. The following is intended only to demonstrate the enormity of the crisis and to give perspective on incidental details associated with generation of electric power.

- Unlike years past, when coal was the dominant fuel for power generation, significant amounts of natural gas are today used for baseload (around the clock) generation of power, peaking generation and also for backing up the intermittency of renewable resources such as wind and solar
- For a few years, the market price for natural gas has been mostly flat at slightly below $3 per dekatherm (or almost exactly 1 MMBTU of gas)
- During the time period referenced, natural gas, if indeed it did flow, was in very tight supply
- Gas transmission and transportation equipment (such as valves, dehydrators, compressors, etc.,) do not perform well during such temperatures recently experienced
- During the time period referenced, market prices for natural gas rose overnight to between $200 per dekatherm and, at times, to more than $500 per dekatherm
- During the time period referenced, the consequent natural gas prices caused SPP to activate various levels of its Energy Emergency Alert system – they are described as follows:
    - Level 0 is normal operations
    - Level 1 is the stage at which all available resources are to be brought online
    - Level 2 is the stage at which it is possible reserve capacity margins are insufficient to meet electric loads
    - Level 3 is the stage at which SPP instructs utilities to curtail customers by shedding loads
- For electric power providers and natural gas retailers alike, the magnitude of price runups far exceeded utilities' ability to collateralize for continual purchases of natural gas and the continuing of service to homes and businesses. This caused a variety of ramifications including: conservation, curtailments (of retail consumption) power generation outages and some electrical rolling blackouts

    - But for possible mitigation plans, indicative examples expected to be soon validated are:
        - that a retail municipal gas utility* whose entire annual budget for natural gas is approximately $300,000 would otherwise receive a gas bill for February alone at slightly less than $2,000,000
        - a larger electric utility*, owning all or portions of gas-fired power generation resources, and whose entire annual budget for natural gas is $9 million would otherwise receive a gas bill for February alone at approximately $85 million
    - In every known instance the immediate and required collateralization for continued natural gas purchases far exceed a utility's cash reserves (or even it's "credit card") nor is it expected that customers would agreeably pay the cost of building those reserves for such an unpredictable incident (it appears, but is not confirmed, that in some cases additional collateralization was waived or ignored during the urgent atmosphere within which operations were conducted)
- For utilities, the foregoing portends uncertain futures for collateralization, future bond or credit ratings, future cash management and future engineering or infrastructure projects
- Although KPP is not one of the examples given above, actual KPP cost numbers are still being finalized and will be first reported to the KPP Board of Directors in mid-March
- Financial mitigation plans are under review everywhere and are not yet established pending the receiving of final and true costs
- True gas price transparency and discovery is under industry, federal and regional examination
- Some coal-fired plants in the SPP froze due to plant equipment failures including also the inability to move, handle and process frozen coal
- Wind turbines, quite typically, do not perform well during such temperatures as they lack the necessary package installations to overcome the "freezing" to equipment and lubricants
- Solar arrays are shown to perform well despite such temperatures, provided there is adequate sunlight, of course

Texas Contrast

- Most of Texas, that is not in the SPP, is in the Electric Reliability Council of Texas (ERCOT)
- Currently, difficulties in ERCOT compared to SPP are only distinguishable superficially
    - ERCOT does not have the generating resource reserve margin requirements that SPP has
    - Temperatures, equipment failures and gas flow issues mentioned previously, appeared in ERCOT to be inordinately disruptive and harmful
    - Consequently, spot prices for gas and electric energy were much higher in ERCOT

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* Although these are indicative and represent actual examples, entity names are withheld